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ABSTRACT

The Nebraska Occupational Information books (volumes I and II) contain information about 386 different occupations in the state and answer questions about specific occupations in detail. The descriptions are arranged according to a U.S. Department of Labor classification system, with occupational titles clustered in general groups of selected categories from the Standard Occupational Classification manual. The information provided about each occupation is divided into the following four sections: (1) description of the occupation, including Holland code, specialties, code number from the Dictionary of Occupational Titles, related occupations, work activities, work setting, Nebraska employment, wages, and growth expected; (2) high school and postsecondary preparation and skills; (3) bibliography; and (4) list of Nebraska postsecondary schools that offer education/training in the field. The following occupational categories are included in Volume II: marketing and sales supervisors; insurance, securities, real estate, and business service sales occupations; commodities sales occupations; retail sales occupations; sales related occupations; administrative support and clerical occupations; private household occupations; protective service occupations; service occupations; farm operators and managers; agricultural related occupations; forestry occupations; mechanics and repairers; construction trades; extractive occupations; precision production occupations; plant and system operators; production supervisors; machine setup operators; machine operators and tenders; fabricators, assemblers, and hand working occupations; production inspectors, testers, samplers, and weighers; transportation and material moving supervisors; transportation occupations; material moving occupations; helpers; handlers, equipment cleaners, and laborers; and military occupations. A wage table and an index are included. (KC)

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OCCUPATIONAL INFORMATION 1990/91

VOLUME II

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volume II

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HOW TO USE THIS BOOK

The OCCUPATIONAL INFORMATION books will help find specific information about the occupations that are described in the Nebraska Career Information System. The occupational descriptions in these books match those occupational titles that appear on the "QUEST List" or "SKILLS List" obtained during a sort. The OCCUPATIONAL INFORMATION makes up one of several parts of the Nebraska Career Information System.

What Can the Occupational Information Tell?

The Occupational Information (Volumes I and II) books contain information about 386 different occupations. The books give information about the many careers available in Nebraska and will answer questions about specific occupations in detail.

These books will not tell a person what occupation to enter. Instead, they will provide information, ideas, and resources that will help make decisions about career possibilities.

How is the Occupational Information Organized?

These books contain detailed descriptions of 386 specific occupational titles which are arranged according to a U.S. Department of Labor classification system. The occupational titles are clustered in general groups of selected categories from the STANDARD OCCUPATIONAL CLASSIFICATION (SOC) manual which classifies occupations having similar work activities and which require similar abilities together in a category.

The NCIS occupational titles are clustered into 313 S.O.C. categories and are identified by a four-digit number. Some occupational titles are further divided into specialities which are identified by a five-digit number. The occupations are organized in numerical order by S.O.C. category codes.

What Can Be Found in Occupational Information?

The information about each occupation is divided into four sections: Description, Preparation, and Bibliography and Schools.

Description

The description begins with a paragraph defining the occupation.

Holland Codes place related occupations together which have similar personality types.

Specialties list specific occupations for each general occupation or S.O.C. category and includes the nine-digit **DICTIONARY OF OCCUPATIONAL TITLES (D.O.T.)** number in parentheses.

NCIS Related Occupations lists other occupations that have similar work activities, aptitudes, and/or training. The occupation is preceded by a four- or five-digit NCIS number..

Work Activities describe the activities that take place on the job.

Aptitudes describe the abilities needed by a worker in this occupation.

Work Setting describes the environment, hours, and type of employers who hire people with this job title.

Considerations present factors to take into account when considering this occupation.

Nebraska Employment is projected for each occupation. These approximate numbers are projected from statistics available from the Nebraska Department of Labor and other state agencies.

Wages list salaries for beginning workers in an occupation for Nebraska and across the United States.

Employment Growth shows projected job growth in three ranges. The EMPLOYMENT GROWTH is based on the Nebraska Department of Labor's projection for 1991. The Department of Labor determines the average growth for all occupations in Nebraska during 1986-1991. This average growth rage is 7.06%. Any growth in an occupations below 7.06% is classified as a low growth rate, occupations between 7.06%

and 10.0% growth rate is classified as a medium growth rate, and occupations above 10.01% growth rate is classified as a high growth rate.

For the Occupational Descriptions in this publication the following scale will represent the growth rate of the occupations:

Low Growth (below 7.06%) will be termed Unfavorable Growth
Medium Growth (7.06% - 10.0%) will be termed Somewhat Favorable Growth
High Growth (10.01% and over) will be termed Favorable Growth

See the Department of Labor publication "Nebraska Occupational Characteristics" for further description of the scale.

Preparation

Skills describe the knowledge or skills necessary for a worker in this occupation.

Licensing or Certification describes the requirements necessary to obtain a license or to gain professional recognition through certification.

Training presents the various training paths a person can pursue to gain the necessary skills for an occupation.

Educational Program lists titles and numbers of programs that are in the NCIS Programs of Study and Training Information book that provides additional educational and training information.

Helpful High School Subjects list the high school program or specific subjects that can help in the preparation for this occupation.

Bibliography

Bibliography lists the publications which were used in preparing information about the occupation and which can be used to locate further information about each occupation.

Schools

Schools list postsecondary schools that offer one or more of the educational programs of training.

How Was the Occupational Information Written?

Many different sources of information were used to compile the Occupational Information. Two of the most important sources were the Dictionary of Occupational Titles (D.O.T.) and the Standard Occupational Classification manual (S.O.C.). The D.O.T. and S.O.C. contain more than 12,000 descriptions of occupations in the United States and how these occupations are clustered by worker functions.

Other sources used to expand the occupational descriptions were the Occupational Outlook Handbook (O.O.H.) the Handbook for Analyzing Jobs, the Classification of Instructional Programs, the Classification of Jobs According to Worker Trait Group, and the Health Career Guidebook—all published by the U.S. Department of Labor. The Encyclopedia of Careers and other publications about careers were used in compiling the occupational descriptions. Information on skills was compiled from any of the above resources plus the Dictionary of Holland's Occupational Codes. School and public libraries and school counseling departments and private counseling agencies will have copies of most of the above and other career resources.

Studies, reports, and surveys about employment and wages published by several state agencies and business organizations were another set of career publications consulted by NCIS in writing the occupational information. Career briefs published by various organizations were additional sources of information.

The NCIS staff is in continued contact with people in the field to review the occupational descriptions for accuracy. These people are educators, supervisors, or employees in the occupational area. The reviewers answer a questionnaire about the information and suggest changes and additions which improve the content of the occupational information.

HOW TO FIND OCCUPATIONAL INFORMATION OF INTEREST!

Begin an exploration of occupations by completing the QUEST Questionnaire or the SKILLS Inventory to produce a list of NCIS occupational titles related to interest and abilities or skills.

Occupations of interest can also be found by using the alphabetical INDEX of OCCUPATIONS in the back of each volume. Locate the four or five digit number and turn to that occupation. The Index also contains the alphabetical list of **occupational specialties** titles.

After reviewing the "List" of occupations from the QUEST questionnaire, the SKILLS Inventory, or the alphabetical list of occupations to select some specific NCIS job titles, locate the occupational information by using the numbers appearing next to the titles and locating those numbers in either Volume I or II.

Another way to find information about an occupational titles is to use the "Table of Contents" that lists all 386 occupational titles and page number for each occupation.

Each Volume of Occupational Information contains an additional item, the "Wage Table." This table converts hourly wages to weekly, monthly, and annual wages.

Use the occupational information to learn about the requirements of various occupations that appear interesting. Think about how these occupations relate to skills, interests and attitudes toward work, leisure time, and personal life styles.

There are many career possibilities. It is not unusual for people to change their minds several times while considering a career. They may also change jobs several times during their lifetime. It is important, however, to decide on a direction for a career. NCIS can be a helpful tool in this process.

OCCUPATIONS

4030 RETAIL SALES SUPERVISORS

OCCUPATIONAL DESCRIPTION

Retail sales supervisors plan, organize, and control the operations of a retail business or department. They estimate consumer demands and decide the types and amounts of goods or services to be sold. They determine prices, credit policies, and operating procedures; plan budgets; and authorize payments. They hire and train staff, assign duties, set salaries, and promote and fire workers. They enforce safety, health, and security rules. They count and deposit money received, order goods, take inventories, and keep accounts and other records. They also handle customers' complaints and may perform some or all of the duties of their workers.

HOLLAND CODE

ESR (Enterprising, Social, Realistic)

SPECIALTIES

Automobile Service Station Managers (185.167-014)
Food Concession Managers (185.167-022)
Parts Managers (185.167-038)
Retail Store Managers (185.167-046)
Vending-Stand Supervisors (185.167-066)
Department Managers (299.137-010)
Military Store Managers (M40300)

NCIS RELATED OCCUPATIONS

1250	Marketing and Advertising Managers
3220	Designers
32207	Merchandise Displayers
4230	Technical Sales Workers and Service Advisors
4240	Sales Representatives
4340	Retail Salespersons
4362	Sales Clerks
4363	Counter Clerks

WORK ACTIVITIES

- Direct merchandising and selling activities.
- Supervise work of personnel.
- Ensure adequate supply of merchandise and order or reorder items.
- Keep up-to-date on current merchandising trends, products, prices, and services.
- Schedule work hours.
- Interview applicants, hire and dismiss workers, and train new employees.
- Evaluate work performances and determine pay raises and promotions.
- Serve customers and assist workers.
- Handle claims and complaints.
- Deposit receipts and pay bills.
- Keep records and inventories.

APTITUDES

- Be able to learn the principles and procedures of store management.
- Have average verbal and numerical abilities.
- Be able to work with people, give them direction, and influence them.
- Be able to make decisions based on data and experience.
- Have ability to handle paperwork.
- Be able to see differences in objects.

WORK SETTING

Environment

Work indoors in offices, display areas, department floors, and storage areas.

Hours

Work 40 or more hours a week; may require long, irregular hours including evenings and weekends.

Employers

Grocery stores; gas stations; new and used car dealers; clothing, furniture, and department stores; automotive parts stores; and self-employed.

CONSIDERATIONS

- Job may be prestigious.
- Workers may have to deal with difficult personnel problems or angry customers.
- Many jobs are filled by promotion within the organization.

NEBRASKA EMPLOYMENT

About 6,040 retail sales supervisors are projected to be employed by 1991.

WAGES

Starting salaries for retail sales supervisors vary according to the amount of previous retail sales experience and education as well as the size and lcoation of the rtail establishment. In Nebraska, entry level salaries range between $14,000 and $16,500 a year. Nationally, starting salaries range between $16,000 and $24,000 a year.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable
National
Somewhat Favorable
Factors

- The growing number of retail stores in cities and small towns will create new positions.
- The outlook depends on economic conditions and the development of new goods and services.

PREPARATION

SKILLS

- Knowledge of products or services being provided.
- Knowledge of accounting principles and pricing structures.
- Skills in management and supervising personnel.
- Skills in planning and organizing.
- Skills in decision making.

TRAINING

- Training in several specific occupations may be obtained through apprenticeship training.
- Some employers will hire people with a high school diploma and retail work experience to be manager trainees.
- Many employers prefer to hire applicants who have at least two years of education beyond high school. Some require bachelors degrees.
- Previous retail work experience is helpful.
- Most retail sales supervisors must have several years of work experience at lower levels before being promoted to supervisory positions.
- Training in several specalty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

144	Apparel Marketing
145	Business Administration & Management
146	Marketing
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

Follow a college prepartory curriculum including courses in composition, business math, economics, psychology, consumer education, marketing, accounting, data processing, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 121-122 and 220.
Guide for Occupational Exploration (2nd ed., 1984), pp. 566-570.
Military Career Guide (1988-89 ed.), p. 262.

SCHOOLS

21801	Bellevue College
44820	Career Institute of Omaha
22316	Central Community College-G I
22501	Central Community College-Hastings
22307	Central Community College-Platte
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
44822	Dory Passolt Models
21810	Embry-Riddle Aeronautical University
21509	Hastings College
44823	International School of Modeling
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
44824	Nancy Bounds International
44717	Nancy Bounds Modeling School and Agency-Lincoln
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice
22711	Southeast Community College-Lincoln
22512	Southeast Community College-Milford
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4122 INSURANCE SALES AGENTS

OCCUPATIONAL DESCRIPTION

Insurance sales agents sell policies to individuals and businesses for protection against future losses and financial pressure. They sell life, fire, accident, and other types of insurance. They may help with financial planning and advise clients on ways to protect their cars, homes, businesses, or other property. They help clients get settlements for insurance claims. Agents spend much of their time discussing insurance needs with clients. DOT 250.257-010

HOLLAND CODE

ECS (Enterprising, Conventional, Social)

NCIS RELATED OCCUPATIONS

1414	Underwriters
4123	Real Estate Sales Agents
4124	Securities and Financial Service Sales Agents
4152	Business Services Sales Representatives
4153	Advertising Sales Representatives
4782	Insurance Adjusters, Examiners, and Investigators

WORK ACTIVITIES

- Develop list of prospects and follow up leads and inquiries.
- Determine insurance needs of prospective clients.
- Visit clients or prospective clients and explain features and merits of policies offered using selling techniques.
- Maintain regular contact with clients.
- Assist clients in arranging premium payments, negotiating loans on their policies, and converting coverage from one policy to another.
- Help clients collect claims.
- Issue policies to clients and seek approval of those policies from the insurance company.

APTITUDES

- Be able to learn the basics of the insurance business and sales techniques.
- Have good verbal and numerical abilities.
- Be able to relate to people and influence them.
- Have ability to handle detailed paperwork.
- Be able to make judgments based on experience, data, and observations.
- Be able to work independently and under pressure.
- Have characteristics of tact, patience, and persistence.

WORK SETTING

Environment
    Work indoors in offices and clients' homes or businesses.

Hours
    Work 40 or more hours a week; agents set their own hours and often work evenings and weekends.

Employers
    Insurance companies, financial institutions, and self-employed.

CONSIDERATIONS

- Agents can have high earnings; however, it may be difficult to get started in the field.
- Job may be discouraging when people do not buy policies.

NEBRASKA EMPLOYMENT

About 3,450 insurance sales agents are projected to be employed by 1991.

WAGES

Starting salaries for insurance sales agents vary because they are paid on a commission basis. Most insurance sales agents in Nebraska average about $15,000 for the first year. Nationally, first year earnings range between $16,000 and $40,000 a year.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable

National
    Somewhat Favorable

Factors
- Population and business growth will increase insurance sales.
- Jobs are available for beginners because of the high first year turnover.

- Beginners often find it hard to build a clientele and many quit during the first years.
- People who are ambitious and have an expertise in a wide range of insurance and financial services will do best.

PREPARATION

SKILLS

- Knowledge of the fundamentals and procedures of insurance sales, details of types of insurance coverage, and laws pertaining to insurance.
- Skills in selling.
- Skills in communication.

LICENSING OR CERTIFICATION

- Insurance sales agents must be licensed by the Department of Insurance Licensing Division.
- To be licensed, an applicant must pass an exam and have at least five years of education in insurance related courses that are approved by the State.
- All insurance sales agents are required to have six hours of continuing education per line every two years.

TRAINING

- The minimum educational requirement is a high school diploma, but many employers prefer to hire college graduates familiar with accounting, economics, finance, and business law.
- Agents take courses and attend insurance-sponsored seminars to learn about the insurance business.

EDUCATIONAL PROGRAM

143	Banking and Finance
145	Business Administration & Management
146	Marketing
148	Insurance

HELPFUL HIGH SCHOOL SUBJECTS

Follow a college preparatory curriculum including courses in speech, economics, government, marketing, accounting, data processing, business law, and psychology.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 204.

Guide for Occupational Exploration (2nd ed., 1984), pp. 478-481.

Occupational Outlook Handbook (1990-91 ed.), p. 230.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21509	Hastings College
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
44301	Spencer School of Business
44826	Teller Training Institute
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4123 REAL ESTATE SALES AGENTS

OCCUPATIONAL DESCRIPTION

Real estate sales agents assist clients in buying and selling of homes or property. They also rent and manage properties, make appraisals, and develop new building projects. They often arrange for loans and title searches for buyers and set up meetings between buyers and sellers. DOT 250.357-018

HOLLAND CODE

ESC (Enterprising, Social, Conventional)

SPECIALTIES

Real Estate Appraisers (191.267-010)
Sales Superintendents (250.157-010)
Building Consultants (250.357-010)
Residence Leasing Agents (250.357-014)

NCIS RELATED OCCUPATIONS

1353	Property Managers
1472	Construction Inspectors
4122	Insurance Sales Agents
4124	Securities and Financial Service Sales Agents
4440	Appraisers
4470	Auctioneers

WORK ACTIVITIES

- Study property listings to become familiar with properties for sale.
- Gather information about the current market value of properties.
- Talk with possible clients to obtain new listings.
- Show properties to prospective clients and try to persuade them to buy.
- Discuss terms and draw up real estate contracts.
- Negotiate loans on property.
- Manage rental properties.
- Appraise property to decide its selling prices.

APTITUDES

- Be able to learn real estate procedures and laws and valuation techniques.
- Have good verbal and numerical abilities.
- Be able to communicate with people and influence them.
- Be able to keep accurate records and present information clearly.
- Have ability to make decisions based on experience and observations.
- Have good space and form perception.
- Enjoy working in a competitive business and dealing with the public.

WORK SETTING

Environment
Work indoors in offices, clients' homes, and other houses for sale.

Hours
Agents set their own hours and often work long, irregular hours including evenings and weekends. Part-time work available.

Employers
Real estate companies, government agencies, appraisal firms, financial institutions, and self-employed.

CONSIDERATIONS

- Success depends on the agent's ambition, willingness to work, and selling skills.
- It may be difficult to get established in this field.
- Income is affected by changes in the economy.

NEBRASKA EMPLOYMENT

About 2,110 real estate sales agents and brokers are employed forming a large-sized occupational group.

WAGES

First year earnings for real estate agents who work full time average between $14,000 and $16,000 in commission a year. Nationally first year earnings vary widely according to geographic location and strength of local economy. Salaries will range from as low as $5,000 to a high of $35,000 in commission a year.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable
National
Somewhat Favorable

Factors

- A large number of agents work in the business for a short time; therefore, there is a need for replacements.
- Real estate sales drop when economic downturns make it difficult to get home mortgage loans.
- Real estate selling is highly competitive.

PREPARATION

SKILLS

- Knowledge of sales techniques, financing procedures, business conditions, property values, and real estate laws.
- Knowledge of the local area and local housing market.
- Skills in working with and influencing others.
- Skills in appraising property and establishing a fair market price.
- Skills in remembering faces and names and facts and figures.
- Knowledge of construction methods.

LICENSING OR CERTIFICATION

- Real estate sales agents must be certified by the Nebraska Real Estate Commission.
- To be licensed, an agent must be at least 19 years of age, must obtain 60 hours of approved real estate education, show proof of two years of full-time experience as a salesperson or obtain 180 classroom hours of approved real estate education, and pass an exam.

TRAINING

- An agent must be a high school graduate.
- They must complete at least 60 hours of approved real estate education.
- These courses are offered by private real estate schools approved by the real estate commission.
- Some colleges offer associate or bachelors degrees with a major in real estate.

EDUCATIONAL PROGRAM

147	Real Estate

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects include courses in speech, government, economics, psychology, construction, marketing, data processing, drafting, and business law.

BIBLIOGRAPHY

Dictionary for Occupational Titles (4th ed., 1977), pp. 140 and 204.

Guide for Occupational Exploration (2nd ed., 1984), pp. 482-488 and 546-549.

Occupational Outlook Handbook (1990-91 ed.), p. 234.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
44815	Randall School of Real Estate
44812	Sally McMahon School of Real Estate
22708	Southeast Community College-Beatrice Campus
21821	University of Nebraska at Omaha
22205	Western Nebraska Community College-Scottsbluff Campus

4124 SECURITIES AND FINANCIAL SERVICES SALES AGENTS

OCCUPATIONAL DESCRIPTION

Securities and financial services sales agents buy and sell stocks, bonds, mutual funds, and other securities. They give clients advice and information on the stock market and on businesses in which they might invest. Some provide loans, tax counseling, and accounting or auditing services to clients. Many of these workers attend sales and trade meetings and meet with community groups to find new clients and to stay informed of economic trends.

HOLLAND CODE

ESA (Enterprising, Social, Artistic)

SPECIALTIES

Broker's Floor Representatives (162.157-014)
Securities Traders I (162.157-042)
Securities Sales Agents (251.157-010)
Financial Services Sales Agents (251.257-010)
Financial-Report Service Sales Agents (251.357-014)

NCIS RELATED OCCUPATIONS

4122	Insurance Sales Agents
4123	Real Estate Sales Agents

WORK ACTIVITIES

- Advise clients and help them make investment transactions.
- Assist clients in buying or selling stocks.
- Transmit buy or sell orders.
- Review clients' investment portfolios.
- Call on new clients and follow up on leads and inquiries.
- Conduct seminars to acquaint prospective clients with investment opportunities.
- Gather and update information concerning investment opportunities and trends.

APTITUDES

- Be able to learn the principles of security investment.
- Have very good use of words and numbers.
- Be able to work well with people and influence them.
- Be able to make decisions based on data, experience, and observations.
- Have ability to work quickly and accurately with detail.
- Be able to work under pressure.

WORK SETTING

Environment
  Work indoors in offices; may travel locally.
Hours
  Work long, irregular hours including weekends and evenings.
Employers
  Brokerage firms, securities firms, investment firms, insurance companies, mutual fund companies, and financial institutions.

CONSIDERATIONS

- The work is challenging and rewarding and there is a possibility of a good income.
- Work may involve a high degree of pressure.
- Some agents may have to do other work during slow periods in the stock market.

NEBRASKA EMPLOYMENT

About 1,140 securities and financial services sales agents are projected to be employed by 1991.

WAGES

Entry level salaries for licensed and bonded securities agents who have completed a college degree and a training period with a brokerage firm range between $14,500 and $24,000 in Nebraska. National averages are somewhat higher with a top range up to $37,000 a year depending on local economic conditions.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Favorable
Factors
  - Growth in this occupation is closely related to national economic conditions.

- Turnover in this occupation is high at the entry level due to the difficulty of establishing a clientele.
- Competition is keen.
- There is a demand for highly experienced salespeople who can provide complete financial services.

PREPARATION

SKILLS

- Knowledge of statistics, research methods, security analysis, and state and federal laws about securities.
- Skills in selling.
- Skills in analyzing financial statements.
- Skills in making decisions.

LICENSING OR CERTIFICATION

- Securities agents must be licensed by the Nebraska Department of Banking and Finance.
- To be licensed, an applicant must be sponsored by a registered broker, complete a training course, and pass an exam.

TRAINING

- Although some employers will hire people who are only high school graduates, most employers look for people with a college degree.
- Programs of study which are helpful include business administration, economics, finance, or liberal arts.
- Most brokerage firms offer a four-month training program to new sales agents after which they take the exam to qualify for licensing.

EDUCATIONAL PROGRAM

143	Banking and Finance
145	Business Administration & Management
146	Marketing
448	Liberal Arts and Sciences
583	Economics

HELPFUL HIGH SCHOOL SUBJECTS

Follow a college preparatory curriculum including courses in composition, speech, literature, advanced math, government, economics, psychology, sociology, marketing, accounting, data processing, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 95 and 204.

Guide for Occupational Exploration (2nd ed., 1984), pp. 546-549.

Occupational Outlook Handbook (1990-91 ed.), p. 238.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21509	Hastings College
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
44301	Spencer School of Business
44826	Teller Training Institute
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21827	University of Oklahoma Advanced Programs
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4152 BUSINESS SERVICES SALES REPRESENTATIVES

OCCUPATIONAL DESCRIPTION

Business services sales representatives market different kinds of commerical services. These may include building maintenance, credit reporting, pest control, security, printing, and telephone answering. DOT 251.357-010

HOLLAND CODE

ESA (Enterprising, Social, Artistic)

SPECIALTIES

Pest Control Service Sales Agents (251.357-018)
Herbicide Service Sales Representatives (251.357-026)
Crating-and-Moving Estimators (252.357-010)
Communications Consultants (253.157-010)
Telephone Services Sales Representatives (253.257-010)

NCIS RELATED OCCUPATIONS

4122	Insurance Sales Agents
4153	Advertising Sales Representatives

WORK ACTIVITIES

- Determine prospective customers by studying business and telephone directories and consulting business associates.
- Gather information about customers' needs by reviewing past orders.
- Persuade customers to use their services.
- Contact and visit prospective customers.
- May prepare sales contract.
- May review the service and resolve complaints.
- Keep sales records.

APTITUDES

- Be able to learn about service being sold.
- Have above average speaking and writing abilities and average math abilities.
- Be able to make decisions based on data and experience.
- Have ability to work with a variety of people and be able to influence them.
- Be able to keep records.

WORK SETTING

Environment

Work indoors; usually travel to clients' businesses.

Hours

Work 40 or more hours a week; may be away from home for several days at a time; may include evenings and weekends.

Employers

Cleaning and janitorial companies; companies that provide testing, counseling, training, bookkeeping, and other services; food service companies; printing companies; security and detective agencies; telephone answering services; public utilities; and telephone companies.

CONSIDERATIONS

- There may be pressure to meet sales goals and deadlines.
- Sales representatives often work alone and schedule and direct own activities.

NEBRASKA EMPLOYMENT

About 1,610 business service sales representatives are projected to be employed by 1991.

WAGES

Starting salaries for Business Services Sales Representatives with a college degree or some college and previous sales experience range between $15,000 and $17,000 in Nebraska depending on the size and location of the business. In most cases this salary is in part or in full paid on a commission basis. Nationally salaries vary widely depending on the market area from a low of $8,000 up to $16,500. Additional compensation in the form of travel expenses or the use of company transportation is common with these jobs.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National

Somewhat Favorable

Factors

- Most job opportunities arise from the need to replace workers who leave their jobs.

- Turnover in this occupation is relatively high.
- Employment growth for this occupation is tied closely to the economic conditions. Prospects are best in larger cities where business and industry is concentrated.

PREPARATION

SKILLS

- Knowledge of sales and marketing.
- Knowledge of the service being sold and how it meets customer needs.
- Skills in influencing others.
- Skills in speaking and writing.
- Skills in organizing work and schedules.
- Skills in recordkeeping particularly with computers.

TRAINING

- High school graduation is the minimum educational requirement.
- Many employers want employees who have college degrees or some college background.
- Most employers require some previous sales experience.
- Some positions are filled by promotion from within the company.

EDUCATIONAL PROGRAM

145	Business Administration & Management
146	Marketing

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, business math, economics, psychology, marketing, accounting, data processing, and business law.

BIBLIOGRAPHY

Dictionary for Occupational Titles (4th ed., 1977), pp. 205-206.
Guide for Occupational Exploration (2nd ed., 1984), pp. 482-488.
Occupational Outlook Handbook (1990-91 ed.), p. 240.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of St. Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21509	Hastings College
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
21612	Midland Lutheran College
22304	Mid-Plains Community College
44802	Nebarska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
44301	Spencer School of Business
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4153 ADVERTISING SALES REPRESENTATIVES

OCCUPATIONAL DESCRIPTION

Advertising sales representatives call on businesses to sell advertising materials and services. They may sell art work for use in composing ads, classified ad space in newspapers or magazines, or advertising time on radio or television programs. Some promote the display of a company's products in local stores. These workers figure the costs of providing products and services, advise clients on advertising matters, and draw up sales or service contracts. DOT 254.357-014

HOLLAND CODE

ESA (Enterprising, Social, Artistic)

SPECIALTIES

Graphic Art Sales Representatives (254.251-010)
Signs and Displays Sales Representatives (254.257-010)
Outdoors Advertising Leasing Agents (254.357-010)
Signs Sales Representatives (254.357-022)
Radio and Television Time Sales Representatives (259.357-018)
Sales-Promotion Representatives (269.357-018)

NCIS RELATED OCCUPATIONS

1250	Marketing and Advertising Managers
3320	Public Relations Specialists
4122	Insurance Sales Agents
4152	Business Services Sales Representatives

WORK ACTIVITIES

- Call on new clients and follow up on leads and inquiries.
- Gather information concerning a client's past and present advertising and sales promotions.
- Present to clients the proposed promotions and advantages of the proposals.
- Write the sales and service contracts and collect payments.
- Advise clients and help them make plans for sales promotions.
- Study advertising and sales trends.
- Arrange displays and advertising promotions.

APTITUDES

- Be able to learn the procedures of advertising and selling.
- Have good verbal and numerical abilities.
- Be able to relate to people and influence them.
- Have good space and form perception.
- Be able to make decisions based on data, experience, and observations.
- Be creative, self-disciplined, and motivated.

WORK SETTING

Environment

Work indoors in offices and clients' businesses.

Hours

Work 40 or more hours a week; hours may be irregular and include evenings and weekends.

Employers,

Advertising agencies, manufacturers, direct mail firms, television and radio stations, newspaper and magazine publishers, and nonprofit organizations with publications.

CONSIDERATIONS

- There may be pressure to meet sales goals or deadlines.
- These people work independently.

NEBRASKA EMPLOYMENT

About 690 advertising sales representatives are projected to be employed by 1991.

WAGES

Salaries vary according to the size of the agency or business as well as the size of the market area. Advertising sales representatives with some sales experience as well as a minimum of two years of college may expect an entry level salary of between $14,000 and $15,500. Those with a bachelors degree and prior experience in the field may expect first year earnings up to $30,000 to $40,000 a year. Much of this compensation will be in the form of commission and benefits. Nationally, salary figures parallel those of Nebraska.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Favorable
Factors

- Employment of advertising sales representatives should increase due to more production of consumer goods, growth in population, and more competition for product markets.
- Job growth is tied to the general economy.
- Applicants with good employment records in sales and formal training will have the best prospect.

PREPARATION

SKILLS

- Knowledge of sales and marketing.
- Skills in ad design and layout and in writing copy.
- Skills in oral and written communication.
- Skills in selling.
- Skills in information gathering and decision making.

TRAINING

- The minimum educational requirement is a high school diploma.
- Most employers prefer to hire people who have at least two years of educational training in such areas as business administration, marketing, or journalism.
- Previous work experience in sales or advertising is helpful.

EDUCATIONAL PROGRAM

145	Business Administration & Management
146	Marketing
193	Journalism and Communications

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, government, psychology, journalism, marketing, accounting, data processing, commerical and graphic arts, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 206, 207, and 209.

Guide for Occupational Exploration (2nd ed., 1984), pp. 478-481.

SCHOOLS

21801	Bellevue College (Bellevue)
	Central Community College, Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21808	Grace College of the Bible
21509	Hastings College
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4210 SALES ENGINEERS

OCCUPATIONAL DESCRIPTION

Sales engineers are engineers who specialize in the sale of technical products and services. They may sell mechanical, electrical, chemical, or related products, and they call on engineers, architects, or other professionals.

HOLLAND CODE

ERI (Enterprising, Realistic, Investigative)

SPECIALTIES

Electrical Products Sales Engineers (003.151-010)
Electronics Products and Systems Sales Engineers (003.151-014)
Mechanical Equipment Sales Engineers (007.151-010)
Agricultural Equipment Sales Engineers (013.151-010)

NCIS RELATED OCCUPATIONS

1442	Wholesale and Retail Buyers
1449	Purchasing Agents
4230	Technical Sales Workers and Service Advisors

WORK ACTIVITIES

- Review blueprints, plans, and other customer documents.
- Estimate costs of providing products or services.
- Persuade clients to use their products or services.
- Advise clients on use, operation, and upkeep of equipment.
- Draw up sales contracts.
- May provide technical training to clients.
- May help in the layout and setup of equipment.

APTITUDES

- Be able to learn about the technical products being sold.
- Be able to make decisions based on data, observations, and experience.
- Have above average use of words for reading and comprehending technical materials and for following oral instructions.
- Have above average use of numbers for preparing plans and cost estimates.
- Have above average space and form perception and be able to visualize objects from drawings and to see slight differences in objects.
- Have average eye-hand and physical coordination and finger dexterity.
- Be able to work with a variety of people and influence them.
- Be able to instruct others and work within set standards.

WORK SETTING

Environment
Work indoors or outdoors in a variety of settings; travel to customers' places of business.

Hours
Work 40 or more hours a week; may be away from home for several days at a time; may include evening and weekend hours.

Employers
Manufacturers of heavy machinery, fabricated metal products, scientific instruments, transportation equipment, and electronic and mechanical equipment; and self-employed.

CONSIDERATIONS

- There may be pressure to meet sales quotas and deadlines.
- Often work on their own setting and own work schedule.

NEBRASKA EMPLOYMENT

About 240 sales engineers are projected to be employed by 1991.

WAGES

Salaries for sales engineers will vary widely depending on the amount of education completed, and the size and location of the business. Sales engineers with a bachelors in chemistry or engineering may expect the higher salaries in the $16,000 to $20,000 range. Those with experience without a degree may in some cases equal the higher salaries but generally start at a lower range of $12,000 to $16,000 a year. Nationally, salaries are generally higher with a range or $18,000 to $32,000 a year. Earnings may be in salary, commission, or a combination of both.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Favorable
Factors
- The outlook depends on the specific product being sold.
- Opportunities are best for the well-trained and experienced.

PREPARATION

SKILLS

- Knowledge of sales and marketing.
- Knowledge of technical products being sold.
- Skills in reading blueprints and plans.
- Skills in planning and making layouts.
- Skills in estimating costs.
- Skills in influencing others.
- Skills in explaination and instruction.
- Mechanical skills.
- Skills in keeping records and writing contracts.

TRAINING

- Most sales engineers have engineering or chemistry degrees from colleges or universities.
- Some employers require only specialized skills, training, and experience related to the product being sold, such as heavy equipment.

EDUCATIONAL PROGRAM

124	Agricultural Services
125	Agricultural Mechanics
146	Marketing
253	Engineering Technologies
524	Chemistry

HELPFUL HIGH SCHOOL SUBJECTS

Follow a college preparatory curriculum including courses in chemistry, physics, economics, marketing, psychology, accounting, and computer science.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 17, 23, and 31.

Occupational Outlook Handbook (1990-91 ed.), p. 232.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21509	Hastings College
11959	Hawkeye Institute of Technology
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4230 TECHNICAL SALES WORKERS AND SERVICE ADVISORS

OCCUPATIONAL DESCRIPTION

Technical sales workers and service advisors sell products that require a technical knowledge of the product and its use. They may sell farm equipment, industrial machinery, or chemicals and drugs. They must be able to understand client needs and show how their product will meet those needs. Some may travel throughout an assigned territory showing samples and catalogs, filling out contracts for orders, and arranging credit terms and delivery.

HOLLAND CODE

ESR (Enterprising, Social, Realistic)

SPECIALTIES

Pharmaceutical Detailers (262.157-010)
Stereo Equipment Salespersons (270.357-038)
Aircraft Sales Representative (273.253-010)
Animal-Feed Products Sales Representatives (272.357-010)
Building Equipment and Supplies Sales Representatives (274.357-018)
Construction Machinery Sales Representatives (274.357-022)
Welding Equipment Sales Representatives (274.357-074)
Dental and Medical Equipment and Supplies Sales Representatives (276.257-010)
Veterinarian Supplies Sales Representatives (276.357-018)
Chemicals and Drugs Sales Representatives (262.357-010)
Farm and Garden Equipment and Supplies Sales Representatives (272.357-014)
Foundry and Machine Shop Products Sales Representatives (274.257-010)
Surgical Appliances Salespersons (276.257-022)

NCIS RELATED OCCUPATIONS

1442	Wholesale and Retail Buyers
1449	Purchasing Agents
3711	Electrical and Electronic Engineering Technicians
4030	Retail Sales Supervisors
4210	Sales Engineers
4240	Sales Representatives

WORK ACTIVITIES

- Visit prospective clients and established customers.
- Explain products and services, demonstrate their use, point out features from catalogs, and leave descriptive literature and samples.
- Answer questions and recommend which product is best suited for customer's needs.
- Assist in planning improvements in production, design, or procedures in client's businesses.
- Install or supervise installation of product and instruct customers in its operation and maintenance.
- Call on customers to see if additional supplies are needed and to see that the products are operating properly.
- Complete reports and keep accurate records of calls and sales.
- Keep up on marketing information.

APTITUDES

- Be able to learn about the product sold and sales procedures.
- Have good verbal and numerical abilities.
- Be able to relate to people and influence them.
- Have good space and form perception and general coordination.
- Be able to make decisions based on data, observation, and experience.

WORK SETTING

Environment
Work indoors and outdoors in a variety of settings; may involve travel.
Hours
Work 40 or more hours a week; arrange schedule to suit customers' convenience; may include evening and weekend hours.
Employers
Manufacturers, wholesale firms, specialty stores, department stores, pharmaceutical companies, and self-employed.

CONSIDERATIONS

- May be pressure to meet sales goals.
- Specialized skills relating to the product being sold are required.

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NEBRASKA EMPLOYMENT

About 2,600 technical sales workers and service advisors are projected to be employed by 1991.

WAGES

Salaries for technical sales workers and service advisors vary widely primarily based on their individual skills in product representation. In Nebraska the average commission falls between $15,000 and $36,000 depending on not only the product but the strength of the local economy. Nationally, salaries are slightly lower with a range of $12,000 to $30,000, again depending on the product and the strength of the local economy.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Somewhat Favorable
Factors
- Outlook is favorable for those people with a knowledge of the product and selling ability.
- The outlook depends upon the product being sold.

PREPARATION

SKILLS

- Knowledge of the product being sold and marketing and sales techniques.
- Skills in oral and written communication.
- Skills in record keeping and accounting.
- Skills in planning displays.
- Skills in organizing and planning.
- Skills in selling.

TRAINING

- The minimum educational requirement is a high school diploma.
- Most employers require at least two years of educational training related to the product being sold.
- New sales workers are usually provided with some on-the-job training.

EDUCATIONAL PROGRAM

112	Animal Sciences
113	Soil Sciences
115	Horticulture and Landscaping
116	Agricultural Business & Management
124	Agricultural Services
146	Marketing

HELPFUL HIGH SCHOOL SUBJECTS

The subjects to be taken depend upon the product to be sold but should include courses in composition, speech, physics, psychology, marketing, accounting, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 209-214.
Guide for Occupational Exploration (2nd ed. 1984), pp. 478-481.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
11944	Central Missouri State University
21102	Chadron State College
21805	Creighton University
21606	Dana College
21509	Hastings College
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22414	Nebraska College of Technical Agriculture
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4240 SALES REPRESENTATIVES

OCCUPATIONAL DESCRIPTION

Sales representatives sell goods to businesses and industrial concerns as sales agents for manufacturers or distributors. They may work in showrooms or travel throughout an assigned territory meeting customers and explaining products. They quote prices, fill out sales contracts, arrange credit terms, and estimate delivery dates. Also, they find new customers, write sales reports, and keep records. DOT 275.357-026

HOLLAND CODE

ESA (Enterprising, Social, Artistic)

SPECIALTIES

Livestock Commission Agents (162.157-026)
Safety Apparel and Equipment Sales Representatives (216.357-026)
Livestock Sales Representatives (260.257-010)
Food Products Sales Representatives (260.357-014)
Malt Liquors Sales Representatives (260.357-018)
Men's and Boy's Apparel Sales Representatives (261.357-022)
Women's and Girl's Apparel Sales Representatives (261.357-038)
Motor Vehicles and Supplies Sales Representatives (273.357-022)
Paper and Paper Products Sales Representatives (279.357-026)
Containers Sales Representatives (274.357-026)
Printing Supplies Sales Representatives (274.357-062)
Computers and Edp Systems Sales Representatives (275.257-010)
Commercial Equipment and Supplies Sales Representatives (275.357-018)
Hotel and Restaurant Equipment and Supplies
Office Machines Sales Representatives (275.357-034)
School Equipment and Supplies Sales Representatives (275.357-042)
Architectural and Engineering Supplies Sales Representatives (276.357-010)
Precision Instruments Sales Representatives (276.357-014)
Hobbies and Crafts Sales Representatives (277.357-010)
Novelties Sales Representatives (277.357-018)
Manufacturers' Representatives (279.157-010)
General Merchandise Sales Representatives (279.357-014)
Leather Goods Sales Representatives (279.357-022)

NCIS RELATED OCCUPATIONS

1250	Marketing and Advertising Managers
1442	Wholesale and Retail Buyers
1449	Purchasing Agents
4030	Retail Sales Supervisors
4230	Technical Sales Workers and Service Advisors
4340	Retail Salespersons
4366	Door-to-Door Sales Workers

WORK ACTIVITIES

- Contact prospective customers, follow up on leads and inquiries, and make regular visits to existing customers.
- Show sample articles, provide descriptive literature, and point out advantages of their products and company policies.
- Write up orders and deal with prices, credit terms, discounts, delivery dates, and shipping methods.
- Inventory customers' stock and record needed items.
- Maintain contact with customers.
- Offer advice on display and advertising of products.
- Compile lists of prospects, make appointments, plan schedules, keep records of calls made, complete reports, write up orders, and maintain expense accounts.
- Prepare promotional materials.
- Familiarize themselves with new products and marketing trends.

APTITUDES

- Be able to learn the basic features of products sold and sales techniques.
- Have good verbal and numerical abilities.
- Be able to relate to a variety of people and influence them.
- Be able to make judgments based on data, experience, and observations.
- Be able to work under pressure.

WORK SETTING

Environment
Work indoors and outdoors; frequent travel required.

Hours
Work 40 or more hours a week; some have irregular hours including evenings and weekends.

Employers
Wholesale firms, manufacturing companies, and packing companies.

CONSIDERATIONS

- There is potential for high earnings for an ambitious person.
- Job may involve pressure to meet sales goals.
- A person must be self-motivated and need little supervision.

NEBRASKA EMPLOYMENT

About 8,540 sales representatives are projected to be employed by 1991.

WAGES

Salaries will vary widely primarily depending on the ambition of the individual. Knowledge of the product as well as the ability of the sales representative to put in long hours and the strength of the economy will determine the salary. In Nebraska salaries for sales representatives with no experience will average between $10,000 and $12,000 the first year. Sales representatives with experience and an established list of clients may fall into the $15,000 to $21,000 range. Nationally, salaries tend to fall within this same range for all sales representatives. Salary is usually in the form of commission and bonuses.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable

National
Somewhat Favorable

Factors
- Opportunities depend on the type of product sold plus future changes in consumer preferences and in the growth of technology.
- Turnover rates are high.
- Competition is keen, but there is a demand for people with sales experience and technical knowledge.

PREPARATION

SKILLS

- Knowledge of sales techniques and of the employer's products and credit, shipping, and delivery procedures.
- Skills in oral and written communication.
- Skills in decision making, organizing, and scheduling.
- Skills in working without supervision.

TRAINING

- Training varies with the product being sold.
- Increasingly employers are hiring applicants who have training beyond high school.
- College degrees are important for advancement to management positions.
- Some employers prefer to promote employees already working in the firm to sales representatives.
- Previous sales experience in junior achievement and summer selling jobs is helpful.
- Training in a speciality occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

112	Animal Sciences
114	Food Sciences
115	Horticulture and Landscaping
116	Agricultural Buiness & Management
124	Agricultural Services
125	Agricultural Mechanics
144	Apparel Marketing
146	Marketing
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

Follow a college preparatory curriculum including courses in composition, speech, literature, business math, economics, psychology, marketing, accounting, data processing, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 95, 208, and 211-215.
Guide for Occupational Exploration (2nd ed., 1984), pp. 478-488.
Occupational Outlook Handbook (1990-91 ed.), pp. 227-242.

SCHOOLS

44820	Career Institute of Omaha
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
11944	Central Missouri State University
21102	Chadron State College
21805	Creighton University
21606	Dana College
44822	Dory Passolt Models
21509	Hastings College
44823	International School of Modeling
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
44824	Nancy Bounds International
44717	Nancy Bounds Modeling School and Agency-Lincoln
22414	Nebraska College of Technical Agriculture
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
44301	Spencer School of Business
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4340 RETAIL SALESPERSONS

OCCUPATIONAL DESCRIPTION

Retail salespersons sell new or used products in retail stores, outlets, and showrooms. They may sell vehicles, boats, cosmetics, musical instruments, jewelry, clothing, sporting goods, shoes, or furniture. Their responsibilities include meeting customers, demonstrating and explaining products, and arranging for sales. They fill out contracts, arrange credit terms, accept payment, and arrange delivery. Some may display items, take inventory, and order new stock.

HOLLAND CODE

ESC (Enterprising, Social, Conventional)

SPECIALTIES

- Infants' and Children's Wear Salespersons (261.257-046)
- Men's and Boys' Clothing Salespersons (261.357-050)
- Shoes Salespersons (261.357-062)
- Women's Apparel and Accessories Salespersons (261.357-066)
- Yard Goods Salespersons (261.357-070)
- Cosmetics and Toiletries Salespersons (262.357-018)
- Floor Coverings Salespersons (270.357-026)
- Furniture Salespersons (270.357-030)
- Household Appliances Salespersons (270.357-034)
- Horticultural and Nursery Products Salespersons (272.357-022)
- Automobile Salespersons (273.353-010)
- Boats and Marine Supplies Sales Representatives (273.357-018)
- Trailers and Mobile Homes Salespersons (273.357-034)
- Books Salespersons (277.357-034)
- Musical Instruments and Accessories Salespersons (277.357-038)
- Pets and Pet Supplies Salespersons (277.357-042)
- Phonograph Records and Tape Recordings Salespersons (277.357-046)
- Sporting Goods Salespersons (277.357-058)
- General Hardware Salespersons (279.357-050)
- General Merchandise Salespersons (279.357-054)
- Jewelry Salespersons (279.357-058)

NCIS RELATED OCCUPATIONS

1250	Marketing and Advertising Managers
1442	Wholesale and Retail Buyers
3220	Designers
32207	Merchandise Displayers
4030	Retail Sales Supervisors
4240	Sales Representatives
4362	Sales Clerks
4363	Counter Clerks
4364	Cashiers
4365	News Vendors
4366	Door-to-Door Sales Workers

WORK ACTIVITIES

- Explain features and demonstrate product.
- Persuade customer to purchase product.
- Take payment or arrange for credit and prepare sales slips or contracts.
- Arrange for delivery and installation.
- May order, price, display, and inventory merchandise.
- Learn about new products.
- Write sales reports and records.

APTITUDES

- Be able to learn about the product being sold and selling techniques.
- Have average verbal and numerical abilities.
- Be able to pay attention to details and handle paperwork.
- Be able to relate to people and influence them.
- Have ability to make decisions based on observations and experience.
- Have good hand and finger dexterity and physical coordination.

WORK SETTING

Environment

Work indoors and outdoors.

Hours

Work 40 hours a week including evenings, weekends, and holidays; part-time work is often available.

Employers

Retail stores, car dealers, department stores, manufacturers, and self-employed.

CONSIDERATIONS

- Some salespersons are paid a commission on their sales in addition to their base salary.
- Some customers may be irritable and difficult to deal with.
- Workers may spend considerable time standing and walking.

NEBRASKA EMPLOYMENT

About 25,310 retail salespersons are projected to be employed by 1991.

WAGES

Salaries for retail salespersons will vary considerably depending on the number of hours worked, and the product sold as well as the level of commission paid. Retail salespersons with experience who work full time average between $10,000 and $13,000 a year in Nebraska. Nationally, salaries range between $8,320 and $17,680 a year depending on the size of the retailer and the strength of the local economy.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Somewhat Favorable
Factors

- Prospects for jobs in retail sales are good because it is a large occupation with a high turnover rate.
- Outlook is best for those with sales experience who are knowledgeable about specific products.
- The use of self-service and computerized checkout systems will limit the size of the sales force.

PREPARATION

SKILLS

- Knowledge of the merchandise and sales techniques.
- Skills in determining customer needs.
- Skills in verbal and oral communication.
- Skills in selling.
- Knowledge of company policies relating to credit, delivery, and installations.
- Skills in math.

TRAINING

- The minimum educational requirement is a high school diploma.
- Most employers provide on-the-job training.
- Employers prefer applicants with sales experience, initiative, and knowledge of the merchandise to be sold.
- Previous sales experience is helpful.
- Training in a specialty occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

115	Horticulture and Landscaping
116	Agricultural Business & Management
124	Agricultural Services
133	Interior Design
144	Apparel Marketing
145	Business Administration & Management
146	Marketing
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses related to the product being sold and in composition, speech, business math, economics, psychology, consumer education, marketing, accounting, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 208-211 and 214-215.
Guide for Occupational Exploration (2nd ed., 1984), pp. 482-488.
Occupational Outlook Handbook (1990-91 ed.), p. 236.

SCHOOLS

21801	Bellevue College
44820	Career Institute of Omaha
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
44822	Dory Passolt Models
21810	Embry-Riddle Aeronautical University

21509	Hastings College
44823	International School of Modeling
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College (Omaha and Elkhorn)
22304	Mid-Plains Community College (North Platte)
21612	Midland Lutheran College
44824	Nancy Bounds International (Omaha)
44717	Nancy Bounds Modeling School and Agency-Lincoln
44802	Nebraska College of Business
22414	Nebraska College of Technical Agriculture
41714	Nebarska Wesleyan Unvierstiy
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
44301	Spencer School of Business
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21717	Union College
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4362 SALES CLERKS

OCCUPATIONAL DESCRIPTION

Sales clerks receive and display mer-chandise, total bills, receive payments, and make change for customers in retail stores. DOT 290.477-014

HOLLAND CODE

ESR (Enterprising, Social, Realistic

SPECIALTIES

Food Sales Clerks (290.477-018)
Self-Service Store Stock Clerks (299.367-014)
Sales Attendants (299.677-010)
Building Materials Sales Attendants (299.677-014)
Military Sales and Stock Specialists (M43620)

NCIS RELATED OCCUPATIONS

4030	Retail Sales Supervisors
4340	Retail Salespersons
4363	Counter Clerks
4364	Cashiers

WORK ACTIVITIES

- Stock shelves, counters, and tables with merchandise.
- Set up advertising displays.
- Stamp, mark, and tag prices on merchandise.
- Total price and tax on merchandise using an adding machine, pencil and paper, or cash register.
- Receive payments and make change.
- Make out charge slips.
- Wrap and bag merchandise.
- Clean shelves, counters, or tables.
- May keep record of sales, prepare inventory of stock, or order merchandise.

APTITUDES

- Be able to learn about merchandise and the sales system and how to operate adding machines and cash registers.
- Have good numerical abilities and be able to make change.
- Be able to deal with a variety of people.
- Be able to carry out detailed paper work and do routine work.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 35 to 40 hours a week; schedule may include evening, weekend, and holiday hours; part-time work available.
Employers
    Retail stores, drug stores, and grocery stores.

CONSIDERATIONS

- Sales clerks often receive discounts on store merchandise.
- Overtime hours may be required at peak times.
- Some customers may be difficult to deal with.

NEBRASKA EMPLOYMENT

About 25,310 sales workers are projected to be employed by 1991. Sales clerks are included in this group.

WAGES

Salaries for sales clerks will vary due to the size, location, type of service offered by the employer, and the number of hours worked. Sales clerks who work full time in Nebraska average between $10,000 and $13,000 a year. However, most sales clerks are employed on a part-time basis at a much lower wage. Nationally, the average earnings for all full-time sales clerks range between $8,000 and $14,200 a year depending on the size and location of the employer.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Favorable
Factors
- Retail selling is a large employment area and the turnover of employees is high.
- Growth in sales and an increase in store hours increases the need for sales clerks.

40

PREPARATION

SKILLS

- Knowledge of merchandise being sold and sales techniques.
- Knowledge of the sales policies of the employer.
- Skills in using adding machines and cash registers.
- Skills in figuring prices and payments.
- Skills in setting up displays.
- Skills in recordkeeping and recording inventories.
- Skills in dealing with a variety of people.

TRAINING

- Most employers prefer to hire high school graduates although some hire students who are in school.
- On-the-job training is provided by the employers.
- Training in specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

144	Apparel Marketing
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include speech, business, math, marketing, accounting, data processing, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 216, 221, and 222.
Guide for Occupational Exploration (2nd ed., 1984), pp. 501-503.
Occupational Outlook Handbook (1990-91 ed.), pp. 227-242
Military Career Guide (1988-89 ed.), p. 110.

SCHOOLS

44820	Career Institute of Omaha
22307	Central Community College - Platte Campus
21102	Chadron State College
44822	Dory Passolt Models
44823	International School of Modeling
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
44824	Nancy Bound International
44717	Nancy Bound Modeling School and Agency
44301	Spencer School of Business
22711	Southeast Community College-Lincoln Campus
21821	University of Nebarsk at Omaha
21622	Wayne State College

4363 COUNTER CLERKS

OCCUPATIONAL DESCRIPTION

Counter clerks work in businesses that offer services such as car rentals, dry cleaning, printing, repair, or storage. They take orders for services and may receive articles to be served, and they advise the customers of the costs involved and when orders will be completed. Also, they collect payments and keep records of receipts and articles received and delivered. DOT 249.366-010

HOLLAND CODE

ERS (Enterprising, Realistic, Social)

SPECIALTIES

Laundry Pricing Clerks (216.482-030)
Apparel-Rental Clerks (295.357-010)
Tool-and-Equipment Rental Clerks (295.357-014)
Bicycle-Rental Clerks (295.467-010)
Boat-Rental Clerks (295.467-014)
Automobile-Rental Clerks (295.477-010)
Branch Store Managers (369.467-010)
Self-Service-Laundry-and-Dry-Cleaning Attendants (369.677-010)

NCIS RELATED OCCUPATIONS

4030	Retail Sales Supervisors
4340	Retail Salespersons
4362	Sales Clerks
4364	Cashiers

WORK ACTIVITIES

- Figure and quote prices for rentals or services.
- Complete rental and work contracts and get customers to sign them.
- Collect payments and record receipts.
- Release equipment or assign services to customers.
- Receive returned equipment or apparel.
- Keep records and prepare work tickets for articles to be cleaned or repaired.

APTITUDES

- Be able to learn the basics of the business where employed.
- Have good verbal and numerical abilities.
- Be able to relate to a variety of people.
- Be able to handle a variety of activities.
- Be able to pay attention to detail and handle detailed bookkeeping.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week with possible weekend and evening hours.
Employers
    Rental companies, car dealers, marinas, bicycle shops, laundry and dry cleaning establishments, and repair shops.

CONSIDERATIONS

- Job may require standing for long periods of time.
- Clerks may have to deal with unhappy, difficult customers.

NEBRASKA EMPLOYMENT

About 810 counter clerks are projected to be employed by 1991.

WAGES

Salaries for counter clerks who have completed on-the-job training with their employer and who work full time average between $8,000 and $10,500 a year. Salaries will vary according to the number of hours worked in most cases due to the high turnover rate and the need to work overtime. Nationally, the average salary range for all counter clerks parallels that of Nebraska with a higher upper range of $14,040 yearly.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Somewhat Favorable

PREPARATION

SKILLS

- Knowledge of policies and practices of business where employed.
- Skills in oral communication.

- Skills in computing costs and payments.
- Skills in using adding machines and cash registers.
- Skills in recordkeeping.

TRAINING

- Little educational training is needed for this occupation.
- Most employers provide on-the-job training when they hire new workers.
- Training in a specialty occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, business math, data processing, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 218-219 and 249.

Guide for Occupational Exploration (2nd ed., 1984), pp. 501-503.

Occupational Outlook Handbook (1990-91 ed.), p. 228.

4364 CASHIERS

OCCUPATIONAL DESCRIPTION

Cashiers handle payments from customers for businesses. Most cashiers receive money, make change, fill out charge forms, and give receipts. They also may do other things such as sell tickets or goods and add up the costs of purchases. Many use cash registers that print the amount of the sale on a paper tape or electronic registers that auto-matically add in taxes and record inventory numbers and other information. Some use adding machines or change-dispensing machines.

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

SPECIALTIES

Food and Beverage Order Clerks (209.567-014)
Cashier I (211.362-010)
Cashier II (211.462-010)
Cashier-Checkers (211.462-014)
Tellers (211.462-034)
Parimutuel-Ticket Cashiers (211.467-018)
Parimutuel-Ticket Sellers (211.467-022)
Ticket Sellers (211.467-030)
Auction Clerks (294.567-010)

NCIS RELATED OCCUPATIONS

4340	Retail Salespersons
4362	Sales Clerks
4363	Counter Clerks
4365	News Vendors
4366	Door-to-Door Sales Workers
4791	Bank Tellers

WORK ACTIVITIES

- Enter purchase amounts and other information on cash registers and total amounts.
- Receive payments from customers.
- Return proper amount of change.
- Accept checks or credit cards and see that charge slips are properly signed and approved by supervisors.
- Check cash drawers, total amount received from customers, and check amount against cash register tapes before leaving.
- May bag or wrap purchases, give refunds or credit slips for returned items, and issue trading stamps.
- May operate ticket dispensing machines and provide information and prices.
- May accept reservations and serve as hosts or hostesses.
- May perform clerical duties.

APTITUDES

- Be able to learn to operate a cash register.
- Have ability to work with numbers, make change, and keep accurate records.
- Be able to meet and work with the public.
- Have good finger dexterity and motor coordination.
- Be able to do repetitious work accurately.
- Be able to work with precise details and follow standard procedures.

WORK SETTING

Environment

Work indoors.

Hours

Work 35 to 40 hours a week including possible split shifts and evening, weekend, and holiday hours; part-time work usually available.

Employers

Retail stores, grocery stores, restaurants, hotels, theaters, recreation centers, hospitals, colleges and universities, and gas stations.

CONSIDERATIONS

- Cashiers may stand for long periods of time.
- Job involves routine activities.
- Some cashiers belong to trade unions.
- May have to deal with customers who are unhappy or difficult.
- Many cashiers are students.

NEBRASKA EMPLOYMENT

About 18,160 cashiers are projected to be employed by 1991.

WAGES

After completing on-the-job training, cashiers who work full time average between $7,000 and $9,648 in Nebraska. Salaries will vary according to the number of hours worked. Due to the high turn over rate in this occupation the opportunity to work expanded hours is very high. Nationally, salaries compare with Nebraska with a slightly higher upper range of $13,000 depending on geographic location.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Very Favorable
Factors
- Expansion of the retail trade and high turnover rate will result in many job openings.
- One factor affecting the outlook is the increased use of computerized checkout systems.

PREPARATION

SKILLS

- Knowledge of the products sold.
- Skills in operating cash registers.
- Skills in making change.
- Skills in dealing with the public.
- Skills in basic math and bookkeeping.

TRAINING

- No special educational training is needed for these jobs, but some employers prefer to hire people who have graduated from high school.
- Most employers provide on-the-job training to new employees.
- Training in a specialty occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, business math, marketing, data processing, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 163, 166-168, and 218.
Guide to Occupational Exploration (2nd ed., 1984), pp. 454-456.
Occupational Outlook Handbook (1990-91 ed.), p. 227.

4365 NEWS VENDORS

OCCUPATIONAL DESCRIPTION

News vendors sell newspapers. Some sell newspapers to customers on the streets or from newspaper stands. Most news vendors are employed as newspaper carriers who sell and deliver newspapers door-to-door along an assigned route or in a neighborhood. They collect payments and return change and keep records of customer accounts.

HOLLAND CODE

ESC (Enterprising, Social, Conventional)

SPECIALTIES

Newspaper Carriers (292.457-010)

NCIS RELATED OCCUPATIONS

4340	Retail Salespersons
4364	Cashiers
4366	Door-to-Door Sales Workers
4743	Mail Carriers

WORK ACTIVITIES

- Purchase newspapers at wholesale prices.
- Deliver them to subscribers or sell them.
- Keep records of accounts.
- Collect money from customers.
- Talk to people along route who might want to subscribe.
- Attend training meetings to learn selling techniques.

APTITUDES

- Be able to learn the procedures of delivering and selling newspapers and collecting money.
- Have average physical and eye-hand coordination.
- Be able to deal with the public and influence them.
- Be able to keep records.

WORK SETTING

Environment
    Work outdoors.

Hours
    Work 10 to 12 hours a week or more depending on the number of subscribers.

Employers
    Newspaper publishing companies and self-employed.

CONSIDERATIONS

- Newspaper carriers must work in all kinds of weather conditions.
- Job requires working seven days a week and holidays or getting a substitute to work.
- This job offers opportunity for children or teenagers to learn about responsibilitiy and make some money or may offer an adult the opportunity to earn extra income.
- These workers may face problems in collecting payments.

NEBRASKA EMPLOYMENT

There is no projection as to the number of news vendors to be employed by 1991.

WAGES

After completing training salaries will vary according to the size of the route. Very few full time positions exist. The few that do exist average about $8,400 a year. These are usually commercial routes rather than door to door. Nationally, the average earning for full time news vendors compares with Nebraska. Salaries will also vary depending on the vendors ability to collect from customers.

EMPLOYMENT GROWTH

Nebraska
    Unavailable

National
    Unavailable

Factors
- There is a high turnover rate in this area.
- Often there is a waiting list for people wanting to carry a paper route.

PREPARATION

SKILLS

- Knowledge of the methods of delivery, procedures for collecting money, and the neighborhood where the paper is carried.
- Skills in recordkeeping and basic math.
- Skills in relating to people.

TRAINING

- No specific education is required; many carriers are grade school or junior high school students.
- Training is provided after carriers are hired.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in basic and business math and speech.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 217.
Guide for Occupational Exploration (2nd ed., 1984), pp. 501-503.

4366 DOOR-TO-DOOR SALES WORKERS

OCCUPATIONAL DESCRIPTION

Door-to-door sales workers sell products in places other than stores such as in homes, on the streets, or over the phone. They take payments, make change, take orders, and deliver products. DOT 291.357-010

HOLLAND CODE

ESC (Enterprising, Social, Conventional)

SPECIALTIES

Party Plan Salesperson-Demonstrators (279.357-038)
Peddlers (291.457-018)
Vendors (291.457-022)
Fund Raisers (293.157-010)
Telephone Solicitors (299.357-014)

NCIS RELATED OCCUPATIONS

4240	Sales Representatives
4340	Retail Salespersons
4364	Cashiers
4365	News Vendors

WORK ACTIVITIES

- Be acquainted with products and services being sold.
- Schedule appointments.
- Conduct product demonstrations or explain services and answer questions.
- Collect or arrange payments and sales contracts and plan delivery of purchases.
- Schedule return visits.
- Compile lists of potential customers.
- Keep records, plan schedules, and write up orders and reports.

APTITUDES

- Be able to learn selling skills and information about the product.
- Have good verbal and numerical abilities.
- Be able to handle detailed paperwork.
- Be able to relate to people and influence them.
- Be self-motivated and ambitious.

WORK SETTING

Environment
Work both indoors and outdoors; travel may be required.
Hours
Work 40 hours a week or more; work may be part-time and include evening and weekend hours.
Employers
Cosmetic companies, housewares and supplies firms, magazine companies, civic and fraternal companies, encyclopedia companies, food processing firms, and self-employed.

CONSIDERATIONS

- Workers in this occupation are free to plan their own work schedules and usually work independently.
- Some of the people contacted may be angry or difficult.

NEBRASKA EMPLOYMENT

About 890 door-to-door sales workers are projected to be employed by 1991.

WAGES

Earnings for door-to-door sales workers will be determined by the product, the ambition of the sales worker, the geographic location as well as economic conditions. Although some of the work is full time, most is evening, weekend and seasonal in nature. The average earnings for the workers employed full time ranges between $9,000 and $16,000 a year in Nebraska. Nationally, salaries parallel those of Nebraska depending on location and economic climate.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Somewhat Favorable
Factors
- Economic conditions affect the outlook in this field.
- Opportunities are best in large cities.

PREPARATION

SKILLS

- Knowledge of the product being sold, of company policies, and of selling techniques.
- Skills in communicating in writing and speaking.
- Skills in math and recordkeeping.
- Skills in dealing with people and influencing them.

TRAINING

- Usually the minimum educational requirement is a high school diploma.
- Most employers provide some form of on-the-job training.
- Previous selling experience is helpful.
- Training in a specialty occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, business math, psychology, marketing, accounting, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 215-217 and 221.
Guide for Occupational Exploration (2nd ed., 1984), pp. 482-488.

4369 TRAVEL AGENTS

OCCUPATIONAL DESCRIPTION

Travel agents coordinate and arrange travel plans for individuals or groups. They may plan itineraries, arrange for accommodations, and schedule transportation. They compute the cost of the trip and prepare or get tickets. DOT 252.157-010

HOLLAND CODE

ESA (Enterprising, Social, Artistic)

NCIS RELATED OCCUPATIONS

4644 Reservation Agents

WORK ACTIVITIES

- Talk with customers to gather information concerning where they want to go, the type of transportation, travel dates, finances, and places to stay.
- Plan, describe, and sell package tours.
- Advise clients of any special fares, accomodations, or services.
- Book reservations and prepare tickets usually using a computer.
- Receive payments and process necessary forms.
- Confirm reservations.
- Provide information and make travel presentations.

APTITUDES

- Be able to learn the procedures of travel planning and arranging.
- Have good verbal and numerical abilities.
- Be able to pay attention to details and handle paperwork and planning.
- Be able to relate to people and influence them.
- Have ability to make decisions based on observation and intuition.

WORK SETTING

Environment
    Work indoors in office areas.
Hours
    Work 40 hours a week; longer hours may be required during busy seasons.
Employers
    Travel agencies, automobile club services, corporate travel departments, and self-employed.

CONSIDERATIONS

- Travel agents usually get reduced rates for their own travel.
- Job may include pressure when serving difficult customers, when arrangements must be made or cancelled on short notice, or when problems occur in scheduling.

NEBRASKA EMPLOYMENT

About 470 travel agents are projected to be employed by 1991.

WAGES

Travel agents who have completed a program of study or on-the-job training may expect a starting wage of between $8,000 and $10,000 a year. Additional compensation in the form of reduced travel expenses are also usually included in the salary package. Nationally, salaries tend to be somewhat higher with an average starting wage of $12,000 yearly.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Favorable
Factors
- Business-related travel is expected to increase which will add to the need for travel agents.
- Employment in this field may be affected by changes in the economy.
- Competition may be very keen.

PREPARATION

SKILLS

- Knowledge of computerized reservation systems, services the agency offers, and sales techniques.
- Knowledge of geography, immigration laws, foreign currency, and customs regulations.

- Skills in reading and interpreting travel schedules and rate books.
- Skills in computing costs and writing tickets.
- Skills in communication.
- Skills in bookkeeping and decision making.

LICENSING OR CERTIFICATION

- Licensing is not required, but travel agents may be certified by the Institute of Certified Travel Agents or the American Society of Travel Agents.
- To be certified, a person must pass a series of tests or complete a special training course.

TRAINING

- The minimum educational requirement is a high school diploma.
- A growing number of employers prefer applicants who have completed a program of study for travel agents.
- Most employers provide on-the-job training.
- Home study courses in tourism are available.

EDUCATIONAL PROGRAM

146	Marketing
159	Transportation and Travel Marketing
445	Foreign Languages
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, literature, business math, government, geography, foreign languages, marketing, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 205.
Guide for Occupational Exploration (2nd ed., 1984), pp. 482-488.
Occupational Outlook Handbook (1990-91 ed.), p. 242.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21509	Hastings College
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21714	Nebraska Wesleyan University
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
44301	Spencer School of Business
99816	Travel Careers Institute
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

4440 APPRAISERS

OCCUPATIONAL DESCRIPTION

Appraisers examine objects to determine how much they are worth. The objects they appraise or assign a money value to include jewelry, cameras, machinery, works of art, and many other items. Some estimate the value of articles to be pawned, insured, or sold. Others inspect paintings, antiques, and other works of art to see if they are authentic and to assign values to them. DOT 191.287-010

HOLLAND CODE

SIR (Social, Investigative, Realistic)

SPECIALTIES

Pawnbrokers (191.157-010)
Art Appraisers (191.287-014)

NCIS RELATED OCCUPATIONS

4123	Real Estate Sales Agents
4470	Auctioneers
4782	Insurance Adjusters, Examiners, and Investigators

WORK ACTIVITIES

- Examine items weighing them or using magnifying glasses or chemical tests if necessary.
- Gather data concerning the replacement costs, current selling prices, and income produced by similar items.
- Determine value of item.
- Prepare reports concerning estimates.
- May have to determine authenticity of item.

APTITUDES

- Be able to learn how to set the value on different items.
- Have good verbal and numerical abilities.
- Be able to work accurately with detail.
- Have an understanding of space and form relationships.
- Be able to make decisions based on data, observations, and experience.
- Be able to be objective when making decisions.

WORK SETTING

Environment
  Work indoors; some travel may be required.
Hours
  Work 40 or more hours a week; may work evenings and weekends to meet clients.
Employers
  Government agencies, private industry, insurance compaines, financial institutions, independent appraisal firms, and self-employed.

CONSIDERATIONS

- Appraisers may work with a wide variety of merchandise.

NEBRASKA EMPLOYMENT

About 250 appraisers are projected to be employed by 1991.

WAGES

Upon completion of a two or four year training program in appraising or business, an appraiser trainee may be hired usually at a salary of approximately $15,000 a year. Upon completion of an additional two years as a trainee the salary level will be in the $20,000 to $24,000 range. Upon completion of two to five years experience as an appraiser and completion of a written exam, the appraiser may expect a substantial increase in salary. Salaries will vary due to economic conditions. Nationally, salaries tend to be somewhat higher than Nebraska with an upper range in the low to middle $30,000 bracket.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Somewhat Favorable
Factors
- Employment depends on the general economic conditions in the country.

PREPARATION

SKILLS

- Knowledge of the item being appraised and the laws related to the area of appraisal.
- Skills in report writing.
- Skills in analysis and appraisal techniques.
- Skills in making calculations.
- Skills in computer processing.

LICENSING OR CERTIFICATION

- Appraisers may apply for membership in the American Society of Appraisers to gain professional recognition.
- Requirements for membership include a college degree, two to five years of appraisal experience, and successful completion of a written exam.

TRAINING

- The minimum educational requirement is usually two to four years of college training in appraising or business.
- A few schools offer bachelors or masters degrees in valuation sciences.
- Two years of work as a trainee is usually required.
- Previous work experience related to items being appraised is helpful.

EDUCATIONAL PROGRAM

145 Business Administration & Management

HELPFUL HIGH SCHOOL SUBJECTS

Follow a college preparatory curriculum including courses in composition, speech, business math, art, accounting, data processing, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 140.
Guide for Occupational Exploration (2nd ed., 1984), pp. 478-481 and 546-549.
Occupational Outlook Handbook (1990-91 ed.), p. 234.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21509	Hastings College
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4450 DEMONSTRATORS, PROMOTERS, AND MODELS

OCCUPATIONAL DESCRIPTION

Demonstrators, promoters, and models work to create buying interest on the part of the public. Some demostrate and answer questions about merchandise in a store. Others model clothes, pose for advertising pictures, or visit people to persuade them to join a club or buy a store's products or services. Duties may range from promoting a store's sales by playing Santa Claus to escorting potential buyers of real estate on tours of property. Some of these workers also may sell the products or services they promote.

HOLLAND CODE

ESA (Enterprising, Social, Artistic)

SPECIALTIES

Sales Exhibitors (279.357-010)
Demonstrators (297.354-010)
Knitting Demonstrators (297.354-014)
Electric-Gas Appliances Demonstrators (297.357-010)
Exhibit-Display Representatives (297.367-010)
Painting Instructors (297.451-010)
Sewing Techniques Demonstrators (297.454-010)
Models (297.667-014)
Photographers' Models (961.367-010)

NCIS RELATED OCCUPATIONS

3240	Actors and Directors
32401	Actors
3320	Public Relations Specialists

WORK ACTIVITIES

- Display, show, or model products.
- Explain features to customers and answer their questions.
- Demonstrate use or production of products.
- Try to persuade customer to buy.
- Use charts, slides, or films to help with demonstration.
- May give product samples.
- May give guided tours of plant where product is made.

APTITUDES

- Be able to learn methods of demonstrating or modeling products to promote sales.
- Be able to learn about the products being sold.
- Have good verbal abilities and be able to speak clearly.
- Be able to relate to people and be able to persuade them.
- Be able to make decisions based on observation.
- Have poise and self-confidence.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; many part-time positions are available; hours may be irregular.
Employers
    Retail and wholesale clothing firms, television, advertising agencies, magazines, manufacturers, designers, commercial photographers, conventions, food processors, department stores, and model agencies.

CONSIDERATIONS

- Work may be exciting and involve meeting interesting people.
- Successful models are well paid and have prestige, but modeling careers are usually short.
- Jobs involve standing for long periods of time.
- Hours and income may be irregular.

NEBRASKA EMPLOYMENT

About 200 demonstrators, promoters and models are projected to be employed by 1991.

WAGES

Salaries for demonstrators, promoters and models in Nebraska reflect the high turnover as well as very limited full-time work. Workers may expect a salary range between $7,000 and $8,700 a year. Nationally, salaries are somewhat higher for all demonstrators, promoters and models with an expanded upper range of $14,000. Some established fashion models and photo print models far exceed this salary range.

EMPLOYMENT GROWTH

- Nebraska
  - Unfavorable
- National
  - Somewhat Favorable
- Factors
  - There is a high rate of turnover because it is difficult to make a living in this occupation.
  - Competition is keen.
  - Employment opportunities for male models are increasing.

PREPARATION

SKILLS

- Knowledge of the product, its major features, and its use.
- Knowledge of the methods of demonstrating or modeling products.
- Skills in communication and persuasion.
- Skills in taking directions.

TRAINING

- Most employers require high school graduation for these jobs.
- Some employers require that models have training from modeling schools which offer training programs lasting from two to ten weeks.

Training also is provided on the job.

EDUCATIONAL PROGRAM

144	Apparel Marketing
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, business math, drama, clothing and textiles, and marketing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 215, 219-220, and 929.
Guide for Occupational Exploration (2nd ed., 1984), pp. 110-112 and 482-488.

SCHOOLS

44820	Career Institute of Omaha
22307	Central Community College-Platte Campus
21102	Chadron State College
44822	Dory Passolt Models
44823	International School of Modeling
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
44824	Nancy Bounds International
44717	Nancy Bounds Modeling School and Agency-Lincoln
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21821	University of Nebraska at Omaha
21622	Wayne State College

4470 AUCTIONEERS

OCCUPATIONAL DESCRIPTION

Auctioneers sell articles at an auction to the highest bidder. Before an auction begins, they decide what articles are worth and arrange them in lots according to their type or value. They begin the auction by stating or asking for a starting bid. They also describe the merchandise and tell about the history or ownership of items. Then they ask for bids and finally sell each item to the highest bidder. DOT 294.257-010

HOLLAND CODE

AES (Artistic, Enterprising, Social)

NCIS RELATED OCCUPATIONS

4123	Real Estate Sales Agents
4440	Appraisers

WORK ACTIVITIES

- Appraise merchandise before sale.
- Arrange items in groups according to value.
- Describe and give information about article.
- Give or ask for starting bid.
- Continue to ask for bids and try to get people to bid higher.
- Close sale to highest bidder.
- May write auction catalogs and advertisements for newspapers and magazines.
- May specialize in auctioning certain types of merchandise such as livestock, farms and farm equipment, households, or antiques.

APTITUDES

- Be able to learn auctioneering methods.
- Have good verbal abilities and be able to speak clearly, quickly, and loudly.
- Have good space and form perception.
- Be able to relate to people and influence them.
- Have ability to keep accurate records and do paperwork.
- Be able to interpret signals and intentions of bidders and make decisions based on observations.

WORK SETTING

Environment

Work indoors and outdoors; may have to work outdoors in all kinds of weather.

Hours

Work highly irregular hours including evenings and weekends; part-time work available.

Employers

Auction houses, livestock yards, automobile businesses, warehouses, and self-employed.

CONSIDERATIONS

- Work provides variety and freedom from set working hours.
- Income may be very irregular.
- Job may require standing for long periods of time.

NEBRASKA EMPLOYMENT

About 150 auctioneers are projected to be employed by 1991.

WAGES

Salaries for licensed auctioneers vary widely primarily due to economic conditions and, in many cases, season. In Nebraska auctioneers earn between $10,500 and $19,000 a year. Geographic location is not a factor in the success of auctioneers because with the small number of auctioneers in Nebraska, travel becomes an important part of the occupation. Auctioneers are usually paid on a contractual basis for a percentage of the sale. Nationally, salaries vary widely. Fine art auctioneers on either coast generally earn the highest salaries. The balance of the country compares favorably with Nebraska salaries.

EMPLOYMENT GROWTH

Nebraska

Unavailable

National

Somewhat Favorable

Factors

- Opportunities vary depending on geographic area, size of community, and season of the year.
- The variety and amount of goods sold through auctions continues to increase especially during poor economic times.

PREPARATION

SKILLS

- Knowledge of auctioneering methods, appraisal values, and market conditions.
- Skills in organizing auctions and writing advertisement copy.
- Skills in math and recordkeeping.
- Skills in relating to people.
- Skills in selling.

LICENSING OR CERTIFICATION

- Licensing requirements vary from city to city in Nebraska.
- In Lincoln, auctioneers are licensed at the City Clerks Office by paying a fifty dollar licensing fee.

TRAINING

- Most auctioneers must be high school graduates and complete a two-or-four-week course at an auction school.
- People may train by working as a helper to an experienced auctioneer for one year or more.

EDUCATIONAL PROGRAM

146	Marketing
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, business math, accounting, and typing and courses related to the items being sold such as livestock, automobiles, and antiques.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 218.
Guide for Occupational Exploration (2nd ed., 1984), pp. 482-488.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21805	Creighton University
21606	Dana College
21509	Hastings College
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

4612 COMPUTER OPERATORS

OCCUPATIONAL DESCRIPTION

Computer operators load, monitor, and run computers to process data according to operating instructions. They load magnetic tapes and disks, observe the machines for stoppage or faulty output, and retrieve printouts. They determine problems and document them. In some jobs they may do some programming. DOT 213.362-010

HOLLAND CODE

CSR (Conventional, Social, Realistic)

SPECIALTIES

Military Computer Operators (M46120)

NCIS RELATED OCCUPATIONS

1712	Computer Systems Analysts
3971	Computer Programmers
4622	Secretaries
4623	Stenographers
4624	Typists
46241	Clerk-Typists
46242	Word-Processing-Machine Operators
4793	Data Entry Keyers
47931	Electronic-Typesetting-Machine Operators

WORK ACTIVITIES

- Examine programmer's instructions for input and make sure computer is loaded.
- Set switches to control input and output of data.
- Run equipment according to set program.
- Work with various types of input and output such as tapes or disks.
- Watch machines and control panel for error lights or error messages.
- Type commands to correct errors.
- Keep logs of work done and operating times and write reports on use of the computer.

APTITUDES

- Be able to learn the workings of a computer system.
- Have good verbal and numerical abilities.
- Be able to work with details and do a variety of routine tasks.
- Have good space and form perception and finger dexterity.
- Be able to work under stress.

WORK SETTING

Environment
Work indoors in offices or computer rooms.

Hours
Work 40 hours a week; evening, night, or weekend hours possible.

Employers
Government agencies, businesses, financial institutions, insurance companies, hospitals, manufacturing firms, colleges and universities, accounting and bookkeeping firms, retail and wholesale companies, and data processing firms.

CONSIDERATIONS

- Working near computers may be noisy.

NEBRASKA EMPLOYMENT

About 2,640 computer operators are projected to be employed by 1991.

WAGES

In Nebraska, entry level salaries for a computer operator trainee range between $7,022 and $11,648. Upon completion of training a computer operator may expect a starting salary of between $13,320 and $21,840. Computer console operators may expect a salary range of $16,000 to $23,296. Salaries will vary according to geographic location and size of employer. Nationally, salaries although compatible with Nebraska can vary widely in major metropolitan areas.

EMPLOYMENT GROWTH

Nebraska
Favorable

National
Favorable

Factors

- New openings are caused by the growing number and size of computer systems.
- The supply of applicants is expected to grow faster than demand.
- Chances are best for people who can operate several types of equipment and who have formal training.

PREPARATION

SKILLS

- Knowledge of computer systems and equipment and specific operating systems.
- Knowledge of technical language used in operating instructions and computer manuals.
- Skill in following technical directions.
- Skill in typing or data processing.

TRAINING

- Most employers prefer high school graduates with at least one year of training in data processing.
- This training is offered in vocational and business schools and community colleges.
- Sometimes high school graduates with an interest and aptitude for the work may be able to receive on-the-job training in small data processing firms or the government.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

151	Word Processing
155	Business Data Processing
211	Computer and Information Sciences
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, literature, math, data processing, office education, and computer science.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 168-169.
Guide for Occupational Exploration (2nd ed., 1984), pp. 470-473.
Occupational Outlook Handbook (1990-91 ed.), p. 251.
Military Career Guide (1988-89 ed.), p. 99.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21509	Hastings College
99817	Institute of Computer Science
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
44805	Word Processing and Secretarial College
22517	York College

4622 SECRETARIES

OCCUPATIONAL DESCRIPTION

Secretaries perform a variety of clerical tasks and assume some administrative duties to keep an office running smoothly. They set appointments, deal with callers, take dictation, and type. Often they handle a number of other duties including filing, routing mail, answering the phone and letters, doing research, and writing reports. Some secretaries specialize in a certain area such as medicine, law, science, or education. DOT 201.362-030

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

SPECIALTIES

Social Secretaries (201.162-010)
Legal Secretaries (201.362-010)
Medical Secretaries (201.362-014)
Membership Secretaries (201.362-018)
School Secretaries (201.362-022)
Military Secretaries and Stenographers (M46220)

NCIS RELATED OCCUPATIONS

1370	Administrative Services Managers
3640	Health Records Technicians
4612	Computer Operators
4623	Stenographers
4624	Typists
46241	Clerk-Typists
46242	Word-Processing-Machine Operators
4630	General Office Clerks
4645	Receptionists

WORK ACTIVITIES

- Answer telephone, provide information or assistance to callers, take messages, and refer calls.
- Open mail and sort and classify the correspondence.
- Answer some of the correspondence themselves.
- Take dictation and transcribe the dictation on typewriter or computer.
- Make travel arrangements and reservations.
- Schedule appointments.
- File records and correspondence, make copies, and prepare outgoing mail.
- Advise on selection of office equipment and supplies.
- Relieve employers of routine duties.
- May supervise other personnel and assign work.

APTITUDES

- Be able to learn office procedures.
- Have good ability with words.
- Have good eye-hand coordination and finger dexterity.
- Be able to move from one task to another quickly.
- Have ability to work with people.
- Be able to work within set standards and keep accurate records.
- Be able to make visual comparisons and proofread.
- Have ability to make decisions based on experience.

WORK SETTING

Environment

Work indoors in office areas.

Hours

Work 35 to 40 hours a week; part-time positions frequently available.

Employers

Insurance companies, banks, real estate firms, educational institutions, businesses, government agencies, law firms, hospitals, manufacturing companies, doctors, and temporary employment services; nearly all types of industries and government agencies.

CONSIDERATIONS

- Chances are good for temporary or part-time work.
- Job may require sitting for long periods of time and working under pressure.
- Some report a high level of stress in meeting deadlines.

NEBRASKA EMPLOYMENT

About 21,920 secretaries are projected to be employed by 1991.

WAGES

Beginning wages for secretaries vary widely due to a number of factors. Depending on level of education, specialization and size of office beginning wages in Nebraska vary between $7,904 and $16,500 per year. Some legal secretaries who are also paralegals may start at at higher salary depending on level of responsibility and size of firm. Nationally, salaries, fall in an average range of $16,326 to $28,051.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Favorable
Factors
- This is a large occupation and the need to replace workers who leave the occupation creates many openings.
- The outlook is influenced by technological advances because with automation secretaries can do more work than in the past.

PREPARATION

SKILLS

- Knowledge of office procedures and office machines such as word processing machines, adding machines, and copiers.
- Skills in typing, transcribing, and dictation.
- Skills in answering the telephone.
- Skills in oral and written communication.
- Skills in spelling, grammar, and punctuation
- Skills in planning, organizing, and decision making.

LICENSING OR CERTIFICATION

- Licensing is not required but a secretary may become a Certified Professional Secretary by passing a series of exams given by Professional Secretaries International.

TRAINING

- Secretaries must be high school graduates, and most employers prefer applicants with some training beyond high school.
- Associate degree programs in secretarial science are available at community colleges and business and technical schools.
- Some employers give on-the-job training.
- Training in a specialty occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

151	Word Processing
155	Business Data Processing
156	Typing and General Office
158	Secretarial Programs
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, grammar, business math, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 153.
Guide for Occupational Exploration (2nd ed., 1984), pp. 444-448.
Occupational Outlook Handbook (1990-91 ed.), p. 276.
Military Career Guide (1988-89 ed.), p. 111.

SCHOOLS

22316	Central Community College-GI
22501	Central Community College-Hastings
22307	Central Community College-Platte
21808	Grace College of the Bible
99817	Institute of Computer Science
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21325	Nebraska Christian College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99630	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice
22711	Southeast Community College-Lincoln
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
44805	Word Processing & Secretarial College
22517	York College

4623 STENOGRAPHERS

OCCUPATIONAL DESCRIPTION

Stenographers take dictation by hand or from recordings and transcribe it into letters, reports, or other written material. They may take dictation in shorthand or transcribe the material from a dictaphone machine or tape recorder. They may sit in on meetings or proceedings and later give reports or word-for-word records of what was said. Some specialize in taking dictation in foreign languages, and others specialize in recording legal proceedings of the courtroom. Many also perform routine office tasks. DOT 202.362-014

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

SPECIALTIES

Shorthand Reporters (202.362-010)
Print Shop Stenographers (202.362-018)
Stenotype Operators (202.362-022)
Transcribing-Machine Operators (203.582-058)
Military Court Reporters (M46230)

NCIS RELATED OCCUPATIONS

4612	Computer Operators
4622	Secretaries
4624	Typists
46241	Clerk-Typists
46242	Word-Processing-Machine Operators

WORK ACTIVITIES

- Take notes or dictation using shorthand or machines such as stenotype machines.
- Transcribe the recorded data on a typewriter.
- Submit copy for approval and verification.
- Distribute copies to authorized persons.
- May be asked to read back parts of transcript during meeting or trial.
- May perform related clerical duties including acting as receptionists, answering the phone, typing reports, and filing correspondence.

APTITUDES

- Be able to learn shorthand and how to operate office and shorthand machines
- Have good verbal abilities.
- Be able to proofread words and numbers and see important details in written materials.
- Have good eye-hand coordination and hand and finger dexterity.
- Be able to work quickly and accurately following specific procedures.
- Be able to hear well.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week.
Employers
    Government agencies, hospitals, utility companies, insurance companies and carriers, law offices, business and labor associations, accounting firms, financial institutions, educational institutions, courts, nearly all industries, stenographic firms, and self-employed.

CONSIDERATIONS

- Workers must sit and concentrate for long periods of time.
- Work is often routine.

NEBRASKA EMPLOYMENT

About 1,080 stenographers are projected to be employed by 1991.

WAGES

Salaries for stenographers vary according to the level of responsibility, training, and the size and location of the employer. In Nebraska, stenographers may expect a salary range between $10,000 and $18,000. The higher salaries will apply to certified shorthand reporters. Nationally, the average salary for a beginning stenographer is $18,400. Bilingual stenographers are employed by the federal government will command the highest salaries.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Unfavorable

Factors

- Employment is projected to decline because of the use of word processing equipment and dictation machines.
- There is a trend toward combining secretarial and stenographic duties.
- High turnover creates most openings.
- Competition for beginning positions is keen.

PREPARATION

SKILLS

- Knowledge of modern business machines.
- Skills in typing and taking dictation.
- Knowledge of typing formats, grammar, and spelling.
- Knowledge of technical terms in such fields as law, medicine, and insurance.
- Clerical skills.

LICENSING OR CERTIFICATION

- Licensing is not required but for professional recognition, shorthand reporters may be certified by the National Shorthand Reporters Association. Some states require certification for court reporters.
- To be certified, a person must complete a two-part exam, and take part in continuing education programs.

TRAINING

- High school graduation is the minimum educational requirement.
- Many employers prefer applicants who have postsecondary training in shorthand and typing.
- Shorthand reporters may be required to graduate from a one- or two-year program from an approved shorthand reporting school.
- Training in a specialty occupation may be obtained though apprenticeship training.

EDUCATIONAL PROGRAM

158	Secretarial Programs
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, grammar, business math, typing, office education, data processing, accounting, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 154 and 156.

Guide for Occupational Exploration (2nd ed., 1984), pp. 463-469.

Occupational Outlook Handbook (1990-91 ed.), p. 278.

Military Career Guide (1988-89 ed.), p. 100.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21808	Grace College of the Bible
99817	Institute of Computer Science
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21325	Nebraska Christian College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
44805	Word Processing and Secretarial College
22517	York College

4624 TYPISTS

OCCUPATIONAL DESCRIPTION

Typists make typed copies of handwritten, printed, and recorded words. Their duties may include typing headings on form letters, typing directly from handwritten drafts, and addressing mail. Some work from rough drafts which are difficult to read or which contain technical material and plan and type tables, prepare reports using many source materials, and make master copies of reports to be reproduced. They may do other office tasks. DOT 203.582-066

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

SPECIALTIES

Clerk-Typists (203.362-010) (46241)
Bordereau Clerks (203.382-010)
Word-Processing-Machine Operators (203.362-022) (46242)

NCIS RELATED OCCUPATIONS

4612	Computer Operators
4622	Secretaries
4623	Stenographers
4630	General Office Clerks
4645	Receptionists
4793	Data Entry Keyers
47931	Electronic-Typesetting-Machine Operators
7642	Typesetting and Composing Machine Operators

WORK ACTIVITIES

- Type form letters or copy stencils.
- Address envelopes or labels.
- Copy data from one record to another.
- Fill in report forms.
- Type statistical tables, technical papers, and manuscripts.
- Prepare typed copy which is to be photographed for reproduction by offset printing methods.
- Operate automatic typewriters that make perforated or magnetic tapes.
- Perform other clerical tasks and office procedures.

APTITUDES

- Be able to learn office procedures.
- Have ability to proofread words and numbers.
- Be able to work quickly and accurately following specific procedures.
- Have good eye-hand coordination and finger and hand dexterity.
- Be able to work with numbers.
- Be able to do the same kind of work repetitively and pay attention to detail.

WORK SETTING

Environment
    Work indoors in offices.
Hours
    Work 40 hours a week; part-time work is frequently available.
Employers
    Government agencies, business services firms, insurance companies, educational institutions, publishers, real estate firms, financial institutions, temporary secretarial services, and all types of businesses and industries.

CONSIDERATIONS

- Job may require sitting for long periods of time and working around noises and distractions.

NEBRASKA EMPLOYMENT

About 4,540 typists are projected to be employed by 1991.

WAGES

Upon completion of a training program either offered by the employer or completion of specialized training from a technical college or business school, typists may expect a salary range of $10,200 to $14,800 a year in Nebraska. Nationally, salaries for all typists fall in an average range of $9,500 to $22,900 yearly.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Somewhat Favorable
Factors

- More officers are using computers, and employers are hiring applicants with word-processing experience.
- Most openings are the result of the high turnover rate in this large occupation.

PREPARATION

SKILLS

- Knowledge of office procedures, spelling, grammar, and punctuation.
- Skills in operating business machines.
- Ability to type accurately at 40 to 60 words per minute.
- Skills in communicating with others and following directions.

TRAINING

- The minimum educational requirement is a high school diploma.
- Some employers offer training programs.
- Some employers prefer applicants who have specialized training from community colleges and technical and business schools.
- Training in a speciality occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

156	Typing and General Office
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, grammar, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 154, 156, and 162.

Guide for Occupational Exploration (2nd ed., 1984), pp. 470-473.

Occupational Outlook Handbook (1990-91 ed.), p. 282.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
44802	Nebraska College of Business
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
21717	Union College
22214	Western Nebraska Community College-Sidney Campus
22517	York College

46241 CLERK-TYPISTS

OCCUPATIONAL DESCRIPTION

Performs clerical work of routine but varied nature in conjunction with moderate but proficient typing. Types reports, business correspondence, forms and other matter. May also file records and reports, post information to records, sort and distribute mail, answer telephone and perform other office duties. DOT 203.362-010

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

NCIS RELATED OCCUPATIONS

4612	Computer Operators
4622	Secretaries
4623	Stenographers
4630	General Office Clerks
4645	Receptionists
4793	Data Entry Keyers
47931	Electronic-Typesetting-Machine Operators

WORK ACTIVITIES

- Type reports, business correspondence, application forms, and other information.
- Post information on records.
- File records and reports.
- Sort and distribute mail.
- Answer telephone.
- Use calculators and other business machines.

APTITUDES

- Be able to learn office procedures.
- Have ability to proofread words and numbers.
- Have good eye-hand coordination and hand and finger dexterity.
- Be able to work quickly and accurately following specific procedures.
- Be able to work with numbers.
- Be able to do the same kind of work repetitively and pay attention to detail.

WORK SETTING

Environment
    Work indoors in offices.
Hours
    Work 40 hours a week; part-time work usually available.
Employers
    Industries, businesses, educational institutions, government agencies, financial institutions, real estate firms, insurance companies, and temporary secretarial services.

CONSIDERATIONS

- Worker must sit for long periods of time and be able to work around noise and distraction.
- Part-time work may be available.

NEBRASKA EMPLOYMENT

About 4,540 clerical typists are projected to be employed by 1991.

WAGES

Salaries will vary according to the size and geographic location of the business or firm. In Nebraska, salaries range from approximately $10,234 a year in smaller businesses up to $18,658 a year in larger businesses. Nationally, salaries for all typists fall in an average range of $9,500 to $22,900 yearly.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Somewhat Favorable
Factors
- High turnover in this large occupational group creates most openings.
- More offices are using computers, and employers are hiring those who have word-processing experience.

PREPARATION

SKILLS

- Knowledge of spelling, grammar, and punctuation.
- Knowledge of office procedures.
- Skills in typing and filing.
- Skills in operating business machines.
- Skills in communicating with others and following directions.

TRAINING

- Most jobs require applicants to at least have a high school diploma and be able to type 40 to 50 words per minute.
- Post-high school training is available at community colleges and technical and business schools.
- Some companies may have a typist-training program.
- Training is several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

156	Typing and General Office
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, grammar, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 154.
Guide for Occupational Exploration (2nd ed., 1984), pp. 470-473.
Occupational Outlook Handbook (1990-91 ed.), p. 282.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
44802	Nebraska College of Business
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
21717	Union College
22214	Western Nebraska Community College-Sidney Campus
22517	York College

46242 WORD-PROCESSING-MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Types correspondence, reports, etc, on word processing equipment; sets formats and proofreads documents for accuracy. Transcribes documents from hand written or recorded tapes. May assemble form letters, merge names, letters, maintain files on tapes, cassettes, and disks. DOT 203.362-022

HOLLAND CODE

CRS (Conventional, Realistic, Social)

NCIS RELATED OCCUPATIONS

4612	Computer Operators
4622	Secretaries
4623	Stenographers
4630	General Office Clerks
4645	Receptionists
4793	Data Entry Keyers
47931	Electronic-Typesetting-Machine Operators

WORK ACTIVITIES

- Read instructions to determine procedures to be followed.
- Adjust controls for spacing, margins, and tabulations.
- Place recording medium in holders.
- Type original material into machine memory.
- Read copy and correct errors.
- Print final copy and record material onto memory medium.

APTITUDES

- Be able to learn to operate word processing machines.
- Have average use of words and numbers.
- Be able to proofread.
- Have average eye-hand coordination and finger dexterity.
- Be able to follow set procedures and work quickly and accurately.
- Be able to see detail and slight differences in objects.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; temporary and shift work is common; part-time work is available.
Employers
    Government agencies, business services firms, insurance companies, educational institutions, publishers, financial institutions, real estate firms, law firms, and temporary secretarial services.

CONSIDERATIONS

- The work requires long periods of sitting and concentrating.
- These operators may suffer eyestrain from using their eyes constantly for close work.

NEBRASKA EMPLOYMENT

About 1,710 word-processing-machine operators are projected to be employed by 1991.

WAGES

Salaries for word-processing-machine operators will vary widely according to the level of responsibility and the size and location of the business or firm. In Nebraska word-processors in smaller businesses may receive as little as $8,882 a year. Word-processing in the largest firms may expect a salary in the range of $17,297 a year. Nationally, salaries range from $14,000 to $18,000 yearly.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Favorable
Factors
- The level of automation has increased the demand for those who have training or experience in word processing.
- The high turnover in this occupation creates many openings.

PREPARATION

SKILLS

- Knowledge of word-processing-machine operations and procedures.
- Knowledge of spelling, grammar, punctuation, and arithmetic.
- Skills in following written and oral instructions.
- Skills in proofreading.

TRAINING

- The minimum educational requirement is high school graduation or equivalent.
- Most employers prefer someone with experience with or training in the use of word processing machines.
- Business schools and community colleges offer training in typing and use of word processing equipment.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

155	Business Data Processing
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in grammar, composition, business math, typing, secretarial education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed. supplement, 1986), p. 23.
Guide for Occupational Exploration (2nd ed., 1984), pp. 470-473.
Occupational Outlook Handbook (1990-91 ed.), p. 282.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22402	McCook Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21821	University of Nebraska at Omaha
21622	Wayne State College
22517	York College

4630 GENERAL OFFICE CLERKS

OCCUPATIONAL DESCRIPTION

General office clerks perform a variety of clerical duties. They type, file, record information, answer the phone, and perform other similar tasks that help an office run smoothly. DOT 209.562-010

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

SPECIALTIES

Congressional-District Aides (209.362-030)
Office Clerks (209.567-022)
Administrative Clerks (219.362-010)
Automobile Contract Clerks (219.362-026)
Real-Estate Clerks (219.362-046)
Police Aides (243.362-014)
Ward Clerks (245.362-014)
Animal-Hospital Clerks (245.367-010)
Animal-Shelter Clerks (249.367-010)
Career-Guidance Technicians (249.367-014)
Police Clerks (375.362-010)
Military Administrative Support Specialists (M46300)

NCIS RELATED OCCUPATIONS

4622	Secretaries
4624	Typists
46241	Clerk-Typists
46242	Word-Processing-Machine Operators
4645	Receptionists
4694	Library Clerks
4696	File Clerks

WORK ACTIVITIES

- File and locate papers in files.
- Address envelopes and mail correspondence.
- Post figures in bookkeeping ledgers and journals.
- Prepare and send out invoices.
- Keep some types of records.
- Answer telephones.
- Serve as receptionists.
- Take telephone orders.
- Provide information to callers.
- Keep inventories.
- Receive payments from customers.
- Operate business machines.

APTITUDES

- Be able to learn office procedures.
- Have average verbal and math abilities.
- Be able to handle a variety of work activities.
- Have good hand and finger dexterity.
- Be able to work within set standards.
- Be able to deal with a variety of people.

WORK SETTING

Environment
    Work indoors in offices.
Hours
    Work 40 hours a week; part-time work is frequently available.
Employers
    Manufacturers, government agencies, financial institutions, insurance companies, hospitals, clinics, real estate firms, leasing agencies, educational institutions, and nearly all types of organizations.

CONSIDERATIONS

- Most clerks sit for long periods of time and are exposed to noise and distractions.
- May have to work under pressure to complete work on time and do work accurately.

NEBRASKA EMPLOYMENT

About 16,860 general office clerks are projected to be employed by 1991.

WAGES

Salaries for general office clerks vary widely primarily depending on the duties performed and the level of responsibility to carry out those duties. In Nebraska, salaries may range from a low of $7,592 up to a high of $19,864. Those individuals at the upper end of the scale will have the most training as well as greater responsibility and will be in a supervisory position. Nationally, salaries range from $9,200 to $25,800 yearly.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Somewhat Favorable

Factors

- Replacement needs should result in a plentiful supply of jobs in this very large occupation.
- Increased use of computers and automated devices in offices affects many clerical jobs.
- Demand is greatest for versatile clerks who have good clerical skills and who understand the organization, activities, and terminology of the business.

PREPARATION

SKILLS

- Knowledge of office procedures and office machines.
- Skills in bookkeeping, typing, filing, and recordkeeping.
- Skills in communicating with others.
- Knowledge of correct grammar, punctuation, and spelling.
- Skills in organizing and planning activities.

TRAINING

- The minimum educational requirement is high school graduation.
- Most employers provide on-the-job training for new employees.
- Community colleges and business and technical schools offer formal training programs for general office clerks.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

156	Typing and General Office
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, grammar, business math, accounting, typing, office education, data processing, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 163, 177, 198, and 201-202.
Guide for Occupational Exploration (2nd ed., 1984), pp. 474-476 and 444-448.
Occupational Outlook Handbook (1990-91 ed.), p. 256.
Military Career Guide (1988-89 ed.), p. 98.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
44802	Nebraska College of Business
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
21717	Union College
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4642 INTERVIEWING CLERKS

OCCUPATIONAL DESCRIPTION

Interviewing clerks talk to people to get information that is needed to complete forms or records. They ask specific questions of people, record their answers, and/or help people fill out forms. Some also sort, classify, and file completed forms.

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

SPECIALTIES

Hospital-Admitting Clerks	(205.362-018)
New-Accounts Clerks	(205.362-026)
Outpatient-Admitting Clerks	(205.362-030)
Charge-Account Clerks	(205.367-014)
Credit Clerks	(205.367-022)
Registration Clerks	(205.367-042)
Survey Workers	(205.367-054)
Statement-Request Clerks	(209.382-018)
Military Personnel Specialists	(M46420)

NCIS RELATED OCCUPATIONS

20324	Case Aides
3313	Reporters

WORK ACTIVITIES

- Interview person to get necessary information.
- Fill out appropriate forms.
- Verify information.
- Send forms and records to appropriate departments.
- May explain available services.
- May compile information for statistics and data.

APTITUDES

- Be able to learn the system of the business where employed.
- Have good verbal ability.
- Have good numerical and clerical abilities.
- Be able to relate well to people.
  Have good finger and hand dexterity.
- Be able to work on a variety of tasks.
- Be able to work with details accurately and stay within set standards.
- Be able to work under pressure and deal with people who may be difficult.

WORK SETTING

Environment
  Work indoors in offices.
Hours
  Work 40 hours a week; evening and weekend hours may be required; part-time positions available.
Employers
  Hospitals, financial institutions, credit companies, credit departments of businesses, government agencies, and marketing research services.

CONSIDERATIONS

- Job may involve pressure and dealing with people under stress.
- There may be frequent opportunities for promotion and transfer into related jobs.

NEBRASKA EMPLOYMENT

About 960 interviewing clerks are projected to be employed by 1991.

WAGES

Salaries for interviewing clerks vary widely according to the type and size of the institution where employed as well as the level of responsibility. In Nebraska salaries range from a low of $13,936 a year up to $18,928. The median salary reported for all interviewing clerks in Nebraska is $16,224. Individuals designated as personnel assistants report a salary range from $11,440 to $19,899 a year. No national salary information was available for this occupational description.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Somewhat Favorable
Factors
- Most job opportunities will result from the need to replace workers; turnover tends to be high because of the possibilities for promotion or transfer into related jobs.

- Demand for these workers has decreased because of the increased use of data processing equipment.

PREPARATION

SKILLS

- Knowledge of vocabulary, procedures, and forms of the business where employed.
- Skills in interviewing and listening.
- Skills in typing and filing.
- Skills in compiling data and statistics.

TRAINING

- The minimum educational requirement is a high school diploma.
- Some employers require college training.
- On-the-job training is provided by most employers.
- Previous work experience in the clerical areas is helpful.

EDUCATIONAL PROGRAM

143	Banking and Finance
156	Typing and General Office
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, business math, economics, psychology, sociology, typing, data processing, and office education.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 157-158 and 162.
Guide for Occupational Exploration (2nd ed., 1984), pp. 457-462.
Occupational Outlook Handbook (1990-91 ed.), p. 259.
Military Career Guide (1988-89 ed.), p. 107.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21805	Creighton University
21606	Dana College
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
44802	Nebraska College of Business
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
44301	Spencer School of Business
44819	The Computer Classroom
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4643 HOTEL CLERKS

OCCUPATIONAL DESCRIPTION

Hotel clerks register guests, assign them to rooms, and issue them their room keys. They also give out mail and messages, answer questions about hotel services, keep guest records, prepare bills, and collect payments. Also, they may sell items such as candy or newspapers and deposit items for guests in the hotel safe. DOT 238.362-010

HOLLAND CODE

ECS (Enterprising, Conventional, Social)

SPECIALTIES

Military Lodging Specialists (M46430)

NCIS RELATED OCCUPATIONS

1351	Food Service and Lodging Managers
13511	Hotel and Motel Managers
4644	Reservation Agents

WORK ACTIVITIES

- Greet and register guests.
- Assign rooms and issue keys and assist guests in getting to rooms.
- Figure bills, handle payments, and collect keys.
- Handle mail and messages.
- Make and confirm reservations.
- Provide information about hotel services and local entertainment, transportation, and restaurants for guests.
- Arrange for deposit of valuables in hotel safe.
- Keep accounts and records and post charges.
- May sell items.

APTITUDES

- Be able to learn the duties of clerking in a hotel or motel.
- Have average verbal and numerical abilities.
- Be able to keep accurate records and give information accurately.
- Have good hand and finger dexterity.
- Be able to perform a variety of tasks.
- Be able to work well with people.
- Be able to work under pressure.

WORK SETTING

Environment
  Work indoors at front desks or in offices.
Hours
  Work 40 hours a week; shifts may include evening, night, weekend, and holiday hours.
Employers
  Hotels, motels, motor lodges, resorts, and self-employed.

CONSIDERATIONS

- Hotel clerks often handle many complaints and may deal with difficult customers.
- A person in this job may stand for long periods of time.
- Work may include pressure during rush periods.

NEBRASKA EMPLOYMENT

About 890 hotel clerks are projected to be employed by 1991.

WAGES

The low salaries reported for hotel clerks reflect the high turnover rate for this occupation as well as the very limited number of full-time jobs. In Nebraska, hotel clerks may expect a salary range of $6,900 to $8,300 a year. Nationally, the average hourly wage is $6.88. Additional compensation in the form of discounted services and gratuities are common in this profession.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Favorable
Factors
- Most jobs will result from replacement needs and there is a relatively high turnover rate among hotel clerks.
- Future need for these clerks may be somewhat limited by the growing use of computers for reservations and bookkeeping.

PREPARATION

SKILLS

- Knowledge of hotel or motel procedures and services and facilities and services available in the area.
- Skills in meeting the public, speaking clearly, and listening.
- Skills in typing or data entry, operating cash registers, and working telephone systems or switchboards.
- Skills in recordkeeping, organization, and bookkeeping.

TRAINING

- High school graduation is usually the minimum educational requirement.
- Employers provide on-the-job training for new workers.
- People with special training in hotel/motel services from technical and business schools, community colleges, or colleges and universities will find the best job opportunities.

EDUCATIONAL PROGRAM

156	Typing and General Office
161	Hotel/Motel/Restaurant Management
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, accounting, typing, office education, data processing, business math, and marketing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 193-194.
Guide for Occupational Exploration (2nd ed., 1984), pp. 457-462.
Occupational Outlook Handbook (1990-91 ed.), p. 259.
Military Career Guide (1988-89 ed.), p. 104.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
11907	Iowa State University
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
44802	Nebraska College of Business
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
21717	Union College
11932	University of Denver
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4644 RESERVATION AGENTS

OCCUPATIONAL DESCRIPTION

Reservation agents make and confirm reservations for passengers on planes, trains, buses, or ships. Some plan travel routes and schedules, prepare travel information, reserve hotel rooms, and issue travel tickets. Others help passengers safely board the correct train or plane. DOT 238.367-018

HOLLAND CODE

ECS (Enterprising, Conventional, Social)

SPECIALTIES

Travel Clerks (238.367-030)
Automobile Club Travel Counselors (238.167-014)
Gate Agents (238.367-010)
Ticket Agents (238.367-026)
Ticketing Clerks (248.382-010)
Military Transportation Specialists (M46440)

NCIS RELATED OCCUPATIONS

4369 Travel Agents
4643 Hotel Clerks

WORK ACTIVITIES

- Plan routes, times, and fares from schedules and rate books for customers.
- Sell tickets, arrange payments, and make reservations using data processing equipment.
- Make out tickets and reservations.
- Assist passengers in selecting seats.
- Provide information concerning departure gates, cancellations, delays, and changes in travel plans.
- Check in baggage and issue baggage claims.
- Keep records of passenger information and supply them to operations officers.
- May make public address announcements or sell travel insurance.

APTITUDES

- Be able to learn travel schedules and ticket reservation and selling procedures.
- Have good verbal and numerical abilities.
- Be able to handle detailed paperwork and perform repeated tasks.
- Be able to relate to people with friendliness and courtesy and work under pressure.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week; schedule may be irregular and include evening, night, weekend, and holiday hours.
Employers
Airlines, bus companies, railroads, steamship lines, and travel agencies.

CONSIDERATIONS

- Job gives the opportunity to help the public and some employers offer free or reduced prices on travel.
- A person in this job may work under pressure during rush periods and may have to deal with difficult or angry customers.
- Work requires much standing and repetition of routine tasks.
- Many reservation agents belong to unions.

NEBRASKA EMPLOYMENT

About 350 reservation agents are projected to be employed by 1991.

WAGES

Salaries for reservation agents vary widely according to the size, nature of the business and geographic location. In Nebraska, salaries range between $11,200 and $16,200 a year. Agents working for major airlines and larger hotels may expect salaries at the upper end of the scale. Some may receive commissions as part of their compensation. Nationally, average salaries range from $14,500 to $29,000 yearly. Reservation agents in major resort areas may expect salaries at the upper end of the range.

EMPLOYMENT GROWTH

Nebraska
Favorable

National
Unfavorable
Factors

- Competition for these positions is keen.
- The outlook depends on general economic conditions and consumer demand for travel services.
- Increased automation of the reservation and ticketing process will limit growth in this occupation.

PREPARATION

SKILLS

- Knowledge of reservation and ticket selling procedures.
- Knowledge of geography of the area.
- Skills in reading and interpreting travel schedules and rate books.
- Skills in computing costs and writing tickets and baggage checks.
- Skills in using computers and data processing.
- Skills in checking for accuracy.

TRAINING

- Some employers will hire high school graduates but preference is given to applicants with some college training.
- Beginning workers are usually given one week of classroom instruction followed by up to three weeks of on-the-job training.

EDUCATIONAL PROGRAM

159	Transportation and Travel Marketing.
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, foreign language, business math, economics, accounting, office education, data processing, and geography.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 193-194.
Guide for Occupational Exploration (2nd ed., 1984), pp. 454-462.
Occupational Outlook Handbook (1990-91 ed.), p. 261.
Military Career Guide (1988-89 ed.), p. 117.

SCHOOLS

21810	Embry-Riddle Aeronautical University
22718	Lincoln School of Commerce
44301	Spencer School of Business
99816	Travel Careers Institute

4645 RECEPTIONISTS

OCCUPATIONAL DESCRIPTION

Receptionists greet customers or visitors, determine their needs, and refer them to people who can help them. Their daily duties depend upon where they work. Those in medical offices may obtain infor-mation from patients. In beauty shops, they set up appointments. In large businesses, they give identification cards to visitors and arrange for escorts. Many receptionists also do other things such as type, answer the phone, file, and sort mail. DOT 237.367-038

HOLLAND CODE

CES (Conventional, Enterprising, Social)

SPECIALTIES

Registrars (204.367-038)
Appointment Clerks (237.367-010)
Information Clerks (237.367-022)
Park Aides (249.367-082)

NCIS RELATED OCCUPATIONS

4622	Secretaries
4624	Typists
46241	Clerk-Typists
46242	Word-Processing-Machine Operators
4630	General Office Clerks

WORK ACTIVITIES

- Obtain visitor's name and determine nature of the visit.
- Refer visitors to waiting areas or appropriate offices or individuals.
- Arrange appointments.
- Keep records of visitors including name, time, date, and to whom visitor was directed.
- May answer phone, relay messages, and answer inquiries.
- May perform clerical duties.

APTITUDES

- Be able to learn basic office procedures.
- Have good verbal abilities.
- Be able to work with others and be courteous and friendly.
- Be able to do repetitious work accurately.

WORK SETTING

Environment
    Work indoors in offices.
Hours
    Work 40 hours a week; part-time work is usually available.
Employers
    Business firms, manufacturing companies, hospitals, medical offices, banks, insurance companies, government agencies, health service providers, and law offices.

CONSIDERATIONS

- Receptionists may set for long periods of time.

NEBRASKA EMPLOYMENT

About 5,150 receptionists and information clerks are projected to be employed by 1991.

WAGES

Salaries vary widely among receptionists primarily due to the size of the business, academic or training background and level of responsibility. In Nebraska the lowest annual salary is reported at $9,360 a year, the highest at $19,445 a year. For Nebraska, the median annual salary for all receptionists is $12,948 a year. Nationally, salaries compare favorably with those of Nebraska with only slight variances in major metropolitan areas in the South and on both coasts.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- A large number of openings are created each year by a high turnover rate.
- Applicants who have clerical skills improve their job prospects.
- Competition is keen because of the minimal hiring requirements.

PREPARATION

SKILLS

- Knowledge of general office procedures.
- Knowledge of employer's products or services and business policies and names and responsibilities of personnel within the organization.
- Skills in taking accurate messages and giving clear directions and instructions.
- Skills in working courteously with all people.
- Clerical skills.

TRAINING

- Most employers prefer to hire high school graduates.
- Training is usually given on the job.
- Business courses taken at technical or business schools or community colleges may help advancement chances.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

156	Typing and General Office.
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, grammar, speech, basic math, marketing, accounting, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp.192-193.
Guide for Occupational Exploration (2nd ed., 1984), pp. 457-462.
Occupational Outlook Handbook (1990-91 ed.), p. 260.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
44802	Nebraska College of Business
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
21717	Union College
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4694 LIBRARY CLERKS

OCCUPATIONAL DESCRIPTION

Library clerks do many of the routine tasks involved in running a library. They help librarians order and organize materials, check books in and out, sort and shelve materials, repair damaged books, and answer routine questions. They may keep files of special materials such as newspaper clippings and pictures. A few drive bookmobiles to take library materials to patrons in different areas of town or country.

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

SPECIALTIES

Talking Books Library Clerks (209.387-026)
Bookmobiles Drivers (249.363-010)
Registration Clerks (249.365-010)
Library Assistants (249.367-046)
Pages (249.687-014)

NCIS RELATED OCCUPATIONS

2510	Librarians
2520	Archivists and Curators
3640	Health Record Technicians
4630	General Office Clerks

WORK ACTIVITIES

- Sorting and arranging printed and non-printed materials.
- Assist people in locating materials.
- Check out materials including recording information and due date on cards.
- Accept returned materials, check the due date, inspect materials for damage, and collect any charges for overdue items.
- Prepare list of overdue books and send overdue notices.
- Sort materials and return them to shelves and files.
- Prepare and issue library cards to new patrons.
- File cards in catalog drawers according to the system.
- Repair damaged books.
- Take inventories and check incoming shipments.
- Perform clerical duties.

APTITUDES

- Be able to learn basic library policies and procedures.
- Have average verbal and clerical abilities.
- Be able to work with detail and check accuracy.
- Have good hand and finger dexterity and space and form perception.
- Be able to perform a variety of tasks in a limited period of time.
- Be able to work with a variety of people with friendliness and courtesy.

WORK SETTING

Environment
Work indoors in libraries.

Hours
Work 40 hours a week; schedule may include evening and weekend hours; part-time work is usually available.

Employers
Public libraries, colleges and universities, public and private schools, government agencies, and special libraries.

CONSIDERATIONS

- Job may be satisfying to someone who enjoys serving people.
- Work involves standing, reaching, stooping, and lifting.

NEBRASKA EMPLOYMENT

About 730 library clerks are projected to be employed by 1991.

WAGES

Salaries for library clerks are quite low reflecting the fact that most libraries depend on volunteer help for this occupation. For those who are employed full time as a library clerk they may expect a salary range between $9,000 and $13,000 a year. Individuals with experience or some library science training may expect the higher salaries. Salaries of library technicians in the federal government average $17,792. Nationally, salaries are only slightly higher than those of Nebraska. Traditionally these positions are filled by students, semi-retired seniors and special needs individuals.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Somewhat Favorable
Factors

- The outlook depends mainly on the level of public funding.
- Some libraries are relying more heavily on volunteers to perform the work done by clerks.

PREPARATION

SKILLS

- Knowledge of library services, policies, and procedures.
- Knowledge of basic reference materials.
- Skills in communication and alphabetizing.
- Skills in maintaining accurate and orderly records.
- Skills in typing and filing.

TRAINING

- Most employers prefer people who have at least one year of college training.
- Some colleges and universities and community colleges offer programs in library technology.
- Previous work on volunteer experience in libraries or clerical or office jobs are helpful.

EDUCATIONAL PROGRAM

156	Typing and General Office
461	Library and Archival Sciences

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should provide a broad educational background with courses in literature, speech, history, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 163, 201, 202, and 204.
Guide for Occupational Exploration (2nd ed., 1984), pp. 527-531.
Occupational Outlook Handbook (1990-91 ed.), p. 220.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
21717	Union College
11920	University of Iowa
21821	University of Nebraska at Omaha
22214	Western Nebraska Community College-Sidney Campus
22517	York College

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4696 FILE CLERKS

OCCUPATIONAL DESCRIPTION

File clerks keep office records accurate, up to date, and properly placed. They examine new materials and store them for future use according to a system such as by number, letter of the alphabet, or subject matter. When these records are requested, they locate them for the borrower. They also keep records of materials removed from the files and make sure that they are returned. In small offices, they often do other things such as type, sort mail, or run office machines.

HOLLAND CODE

CSR (Conventional, Social, Realistic)

SPECIALTIES

File Clerks I (206.362-010)
File Clerks II (206.367-014)
Classification Clerks (206.387-010)
Morgue Librarians (206.387-022)
Records Custodians (206.387-026)

NCIS RELATED OCCUPATIONS

4630 General Office Clerks

WORK ACTIVITIES

- Sort and arrange materials according to filing system used by the office.
- Label and prepare new file folders.
- Remove outdated materials from files.
- Prepare indexes which list all filed items and their location.
- Locate items and turn them over to persons requesting them.
- Keep a record of items borrowed and look for missing files.
- May perform clerical duties such as typing and answering the phone.

APTITUDES

- Be able to learn and organize filing systems.
- Have good verbal and numerical abilities.
- Be able to handle repetitious tasks accurately.
- Have good hand and finger dexterity.
- Be able to work within exact standards.

WORK SETTING

Environment
    Work indoors in offices.
Hours
    Work 40 hours a week; part-time work is sometimes available.
Employers
- Banks, insurance companies, government agencies, manufacturing firms, businesses, educational institutions, health services providers, and hospitals.

CONSIDERATIONS

- Clerks must be able to stand, stoop, and reach.

NEBRASKA EMPLOYMENT

About 2,090 file clerks are projected to be employed by 1991.

WAGES

Salaries for file clerks span a wide range depending on the duties performed and the level of responsibility to carry out those duties or the duties of others. The lowest annual salary reported in Nebraska is $7,280 and the highest salary reported is $14,040. The median annual salary for all file clerks in Nebraska is $10,559. Salaries will of course depend on the size of the company as well as the preparation of the individual hired for the position. National salaries range from $9,900 to $16,300.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- Business expansion and the increasing number of records and forms kept by businesses might result in new openings.
- Greater use of computers may cause a decrease in the demand for these workers.

PREPARATION

SKILLS

- Knowledge of office procedures and filing systems.
- Skills in typing.
- Skills in filing and working accurately.
- Skills in other clerical duties.

TRAINING

- High school graduation is required by most employers.
- Training is given on the job by an experienced worker or supervisor.

EDUCATIONAL PROGRAM

156	Typing and General Office
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 158-159.
Guide for Occupational Exploration (2nd ed., 1984), pp. 474-476.
Occupational Outlook Handbook (1990-91 ed.), p. 272.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
44802	Nebraska College of Business
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
21717	Union College
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4712 BOOKKEEPERS AND ACCOUNTING AND AUDITING CLERKS

OCCUPATIONAL DESCRIPTION

Bookkeepers and accounting and auditing clerks keep business and account records and compile reports that show all money received and paid out by a firm. They work with business records such as invoices, ledgers, vouchers, and bank balances. To total lists of figures and compute interest or payroll, they use adding machines, calculators, and other business machines.

HOLLAND CODE

CSR (Conventional, Social, Realistic)

SPECIALTIES

Account-Information Clerks (210.367-010)
Bookkeepers I (210.382-014)
Bookkeepers II (210.382.018)
General-Ledger Bookkeepers (210.382-046)
Mortgage-Loan-Computation Clerks (210.382-050)
Night Auditors (210.382-054)
Securities Clerks (210.382-062)
Mortgage-Accounting Clerks (216.362-026)
Check-Processing Clerks I (216.387-010)
Accounting Clerks (216.482-010)
Posting Clerks (216.587-014)
Collection Clerks (216.362-014)
Data Processing Accounting Clerks (216.382-010)
Tax Preparers (219.362-070)
Parimutuel-Ticket Checkers (219.587-010)
Military Accounting Specialists (M47120)
Military Payroll Specialists (M47121)

NCIS RELATED OCCUPATIONS

1370	Administrative Services Managers
1412	Accountants and Auditors
4794	Statistical Clerks

WORK ACTIVITIES

- Post entries in ledgers.
- Check items on reports and make necessary corrections.
- Use adding machines, calculators, or computers.
- Prepare invoices or monthly statements to be sent to customers.
- Maintain financial files.
- Complete claim, tax, or payroll forms.
- Prepare and check financial reports used by management.
- Record details of transactions in account and cash journals.

APTITUDES

- Be able to learn bookkeeping procedures and accounting principles.
- Have very good numerical abilities.
- Be able to work accurately with detail.
- Have good finger dexterity and eye-hand coordination.
- Be able to work within set limits.
- Be able to use a variety of skills.

WORK SETTING

Environment
Work indoors in offices.
Hours
Work 40 hours a week.
Employers
Manufacturing firms, businesses, insurance companies, financial institutions, health services providers, educational institutions, government agencies, public utilities, bookkeeping firms, and self-employed.

CONSIDERATIONS

- Workers may earn extra money by doing outside work for private businesses.
- A person in this job must be able to set and concentrate on details for long periods of time.

NEBRASKA EMPLOYMENT

About 16,800 bookkeepers and accounting clerks are projected to be employed by 1991.

WAGES

Salaries for bookkeepers and accounting and auditing clerks vary according to the size of the business, location and level of responsibility for the position. In Nebraska, the lowest reported salary is $9,360. The highest reported salary is $14,710. The median salary for all bookkeepers and accounting and auditing clerks is $12,647 a year. National salaries range from $9,600 to $24,000 with an average yearly wage of $14,900.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors
- Most openings will occur due to replacement needs.
- The use of computers to perform routine bookkeeping functions is increasing and this is slowing employment growth for bookkeepers and changing the skills required for this occupation.

PREPARATION

SKILLS

- Knowledge of accounting and bookkeeping principles and procedures.
- Knowledge of operating adding machines, computers, and calculators.
- Skills in organization and calculating with accuracy.
- Skills in general clerical duties.

TRAINING

- High school graduation is the minimum educational requirement.
- Most employers prefer applicants who have completed training at business schools, community colleges, or colleges and universities.
- On-the-job training is usually provided.
- Training data processing and computer science is helpful.

EDUCATIONAL PROGRAM

155	Business Data Processing
156	Typing and General Office
157	Accounting
158	Secretarial Programs

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, business math, accounting, office education, data processing, computer science, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 164-166, 173, 175, and 179.
Guide for Occupational Exploration (2nd ed., 1984), pp. 449-453.
Occupational Outlook Handbook (1990-91 ed.), p. 255.
Military Career Guide (1988-89 ed.), pp. 97 and 106.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21808	Grace College of the Bible
21509	Hastings College
99817	Institute of Computer Science
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21325	Nebraska Christian College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College

22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
44805	Word Processing and Secretarial College
22517	York College

4722 DUPLICATING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Duplicating machine operators tend equipment that can copy documents. The machines they use include mimeograph, stencil, copying, and photographing machines. They see that the proper number and size of copies are made and collated (arranged in order).

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Duplicating-Machine Operators I (207.682-010)
Duplicating-Machine Operators II (207.682-014)
Offset-Duplicating-Machine Operators (207.682-018)
Braille-Duplicating-Machine Operators (207.685-010)
Photocopying-Machine Operators (207.685-014)
Photographic-Machine Operators (207.685-018)

NCIS RELATED OCCUPATIONS

7443	Printing Press Setup Operators
7444	Photoengraving and Lithographing Machine Setup Operators

WORK ACTIVITIES

- Prepare master copies for duplicating.
- Prepare duplicating machines or camera; adjust for speed, size of copies, and setting.
- Start machine and make further adjustments during the copying process.
- May collate and combine copied sheets.
- May process and duplicate film.
- May perform other clerical duties.

APTITUDES

- Be able to learn the process of operating a duplicating or copying machine or camera.
- Have good eye-hand coordination and space and form perception.
- Be able to complete routine tasks in set time limits.
- Be able to keep detailed records.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours a week; part-time work is usually available.
Employers
  Businesses, manufacturing firms, public utilities, financial institutions, insurance companies, government agencies, and educationl institutions.

CONSIDERATIONS

- Work may be noisy and messy.

NEBRASKA EMPLOYMENT

About 280 duplicating machine operators are projected to be employed by 1991.

WAGES

In Nebraska, salaries for duplicating machine operators range between $11,232 and $14768. Nationally, salaries tend to be only slightly less than those in Nebraska ranging between $9,000 and $13,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Somewhat Favorable
Factors
- Most job openings result from replacement needs.
- Advances in office technology and computerized recordkeeping will reduce the need for new operators.

PREPARATION

SKILLS

- Knowledge of duplicating or photographic machine operations.
- Skills in handling large amounts of paper.
- Skills in completing clerical duties.
- Skills in preparing documents for copying.

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TRAINING

- The minimum educational requirement is a high school diploma.
- Most employers provide four to six weeks of on-the-job training.

EDUCATIONAL PROGRAM

156 Typing and General Office
632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 159.
Guide for Occupational Exploration (2nd ed., 1984), pp. 262-275.
Occupational Outlook Handbook (1990-91 ed.), p.453.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
44802	Nebraska College of Business
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
21717	Union College
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4732 TELEPHONE OPERATORS

OCCUPATIONAL DESCRIPTION

Telephone operators tend telephone switchboards to connect callers. Most work in central telephone offices or large businesses. A few work in police stations, military bases, telegraph offices, airports, or operator training centers. Those who work in telephone offices help callers reverse charges, find phone numbers, arrange conference calls, and contact help in emergencies. They also record billing information for calls made. DOT 235.662-022

HOLLAND CODE

CES (Conventional, Enterprising, Social)

SPECIALTIES

Central-Office Operators (235.462-010)
Police District Switchboard Operators (235.562-014)
Directory-Assistance Operators (235.662-018)
Military Telephone Operators (M47320)
Military Teletype Operators (M47321)

NCIS RELATED OCCUPATIONS

1341	Communications Operators Managers
4751	Dispatchers
6158	Telephone Installers and Repairers

WORK ACTIVITIES

- Aid customers who are unable to dial.
- Supply area codes and instructions.
- Handle person-to-person, collect, charge, and coin box calls.
- Deal with emergency calls.
- Refer callers to telephone service departments.
- Provide directory assistance.
- Handle mobile, marine, and overseas calls.
- Record length of calls and bill appropriate accounts.
- Key credit card numbers to which calls are to be charged.
- Keep records related to their activities.

APTITUDES

- Be able to learn to operate switchboard equipment.
- Be able to speak clearly and hear well.
- Have good eye-hand coordination and finger and hand dexterity.
- Be able to check written materials and to do repetitious tasks accurately.
- Have ability to relate to people with friendliness and courtesy.
- Be able to work under pressure.

WORK SETTING

Environment
    Work indoors
Hours
    Work 40 hours a week; may include evening, night, weekend, and holiday hours; part-time work is often available.
Employers
    Telephone companies, colleges and universities, large business firms, hospitals, government agencies, large hotels, and department stores.

CONSIDERATIONS

- Workers sit for long periods of time.
- Some employers require passing physical exams and aptitude tests.

NEBRASKA EMPLOYMENT

About 2,460 telephone operators are projected to be employed by 1991.

WAGES

Salaries for telephone operators will vary according to the size, location and in particular the type of business or agency. In Nebraska, salaries range between $10,192 and $16,432 a year. Nationally a much broader salary range exists ranging from $8,900 to more than $24,000 a year. The highest salaries will be found in major corporations, large federal agencies and major medical research centers.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Somewhat Favorable

Factors

- Increased automation will limit employment growth for telephone operators.
- The number of applicants exceeds the number of job openings.

PREPARATION

SKILLS

- Knowledge of telephone console and computer-based operations.
- Skills in working quickly and accurately under pressure.
- Skills in listening and staying calm in emergencies.
- Skills in clerical and recordkeeping duties.

TRAINING

- Most employers prefer to hire high school graduates.
- Operators receive on-the-job training for one to three weeks.

EDUCATIONAL PROGRAM

156	Typing and General Office
158	Secretarial Programs
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, business math, typing, office education, data processing, and computer science.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 191.
Guide for Occupational Exploration (2nd ed., 1984), pp. 457-462.
Occupational Outlook Handbook (1990-91 ed.), p. 280.
Military Career Guide (1988-89 ed.), pp. 114 and 115.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21808	Grace College of the Bible
99817	Institute of Computer Science
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21325	Nebraska Christian College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
44805	Word Processing and Secretarial College
22517	York College

4742 POSTAL CLERKS

OCCUPATIONAL DESCRIPTION

Postal clerks sort and process mail in post offices and large mail processing centers. They separate incoming and out-going mail, feed letters through stamp-canceling machines, and sort mail by zip code for delivery or routing. Other clerks work at counters selling stamps, post cards, and stamped envelopes. They also register, insure, and weigh mail and compute the cost of mailing items.

HOLLAND CODE

SCE (Social, Conventional, Enterprising)

SPECIALTIES

Mail Handlers (209.687-014)
Post-Office Clerks (243.367-014)
Military Postal Specialists (M47420)

NCIS RELATED OCCUPATIONS

1344	Postmasters and Mail Superintendents
4743	Mail Carriers
4744	Mail Clerks

WORK ACTIVITIES

- Sell stamps, postcards, envelopes, and money orders.
- Receive mail and packages from customers and determine required postage.
- Insure, register, or certify mail.
- Rent post office boxes.
- Provide information.
- Separate incoming and outgoing mail.
- Operate electronic sorting machines and automatic equipment.
- Keep records of mail requiring special service.
- Prepare forms, maintain files, and print and attach labels.

APTITUDES

- Be able to learn procedures of mail handling and processing.
- Have good verbal and numerical abilities.
- Be able to read words and numbers quickly and accurately.
- Have good eye-hand coordination and hand and finger dexterity.
- Be able to relate to people with friendliness and courtesy.
- Be able to lift medium loads.

WORK SETTING

Environment
    Work indoors
Hours
    Work 40 hours a week; hours may be irregular; part-time work may be available.
Employers
    United States Postal Service

CONSIDERATIONS

- Applicants must pass a postal service exam.
- Job may require standing or sitting for long periods of time.
- Many workers belong to unions.

NEBRASKA EMPLOYMENT

About 970 postal clerks are projected to be employed by 1991.

WAGES

New clerks who have yet to complete on-the-job training and classroom instruction are usually hired at approximately $10,192 a year. Upon completion of all training, clerks may be advanced up to $14,768 a year depending on the duties performed and the level of responsibility which may include supervisory work. Nationally, the average starting salary is $20,100 yearly.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Unfavorable
Factors
- Turnover will create most openings.
- The outlook depends upon the volume of mail and the increased use of automation to handle mail.
- There is a surplus of applicants.

PREPARATION

SKILLS

- Knowledge of the mail sorting system and government laws and procedures that apply to the postal system.
- Skills in operating postal equipment.
- Skills in reading numbers and words quickly.
- Skills in remembering names and addresses.

TRAINING

- Applicants should be high school graduates, be eighteen years old, and pass a civil service and a physical exam. They must also show ability to lift up to 70 pounds and pass a machine aptitude test.
- New clerks are trained on the job with classroom instruction included.

EDUCATIONAL PROGRAM

632 On-the-Job training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math and office education.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 164 and 198.
Guide for Occupational Exploration (2nd ed., 1984), pp. 454-456.
Occupational Outlook Handbook (1990-91 ed.), p. 268.
Military Career Guide (1988-89 ed.), p. 108.

4743 MAIL CARRIERS

OCCUPATIONAL DESCRIPTION

Mail carriers walk or drive over planned routes to deliver and collect mail. In the early mornings, they pick up their mail at the post office and arrange it for delivery. They deliver the mail to places along their routes. They also collect postage-due and delivery fees for registered, certified, or insured mail. When they have completed their routes, they return to the post office with the mail they have gathered and turn in the mail receipts and fees collected during the day. DOT 230.367-010

HOLLAND CODE

SCR (Social, Conventional, Realistic)

SPECIALTIES

Rural-Mail Carriers (230.363-010)

NCIS RELATED OCCUPATIONS

1344	Postmasters and Mail Superintendents
4365	News Vendors
4742	Postal Clerks
4744	Mail Clerks
8218	Driver-Sales Workers

WORK ACTIVITIES

- Sort mail by street names and numbers and arrange it in the order it is to be delivered.
- Correct addresses, mark mail to be forwarded, and prepare receipts for registered, certified or insured mail.
- Deliver mail refilling bags at relay boxes.
- Return to post offices.
- Turn in undeliverable mail, signed receipts, and any monies or fees collected.
- May deliver only parcel post or special delivery mail.
- May sell stamps and money orders and accept letters or packages to be mailed.

APTITUDES

- Be able to learn postal and mail sorting systems.
- Have ability to read names and numbers accurately and quickly.
- Be able to do routine and repetitive work.
- Have good eye-hand coordination and hand and finger dexterity.
- Be able to work well with people.
- Be able to lift at least 70 pounds.

WORK SETTING

Environment
    Work indoors and outdoors.
Hours
    Work 40 hours a week; hours may be irregular; part-time work may be available.
Employers
    United States Postal Service.

CONSIDERATIONS

- Job may offer good job security but with little opportunity for advancement.
- Carriers must work in all kinds of weather and stand, walk, and carry a heavy bag.
- Some workers belong to a union.

NEBRASKA EMPLOYMENT

About 2,390 mail carriers are projected to be employed by 1991.

WAGES

In Nebraska, salaries for mail carriers range between $10,400 and $16,640 a year. Slightly higher salaries will be found in the metropolitan areas of the state. Nationally, the average starting salary is $20,100 yearly.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Unfavorable
Factors
- Most openings result from replacement needs but turnover is low.
- There is a surplus of applicants.
- An expected cutback in the number of deliveries may limit the demand for these worker.

PREPARATION

SKILLS

- Knowledge of the mail sorting system and of government laws and procedures that apply to the postal system.
- Knowledge of the route being worked.
- Skills in reading quickly and accurately.
- Skills in remembering names and addresses.
- Skills in driving safely.

TRAINING

- Applicants must be eighteen years old; pass a civil service exam, physical exam, and driver's test; have a state driver's license; and be able to lift 70 pounds.
- New workers are trained on the job.
- They may begin as part-time carriers and become full-time regular carriers as they gain seniority.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, typing, government, and office education.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 190.
Guide for Occupational Exploration (2nd ed., 1984), pp. 463-469.
Occupational Outlook Handbook (1990-91 ed.), p. 268.

4744 MAIL CLERKS

OCCUPATIONAL DESCRIPTION

Mail clerks prepare incoming and outgoing mail for distribution. They receive, sort, and deliver incoming mail and collect, seal, and stamp outgoing mail. In some firms they also deliver messages and other items from one office to another. DOT 209.587-026

HOLLAND CODE

CRS (Conventional, Realistic, Social)

SPECIALTIES

Direct-Mail Clerks (209.587-018)
Registered-Mail Clerks (209.587-038)
Parcel-Post Clerks (222.387-038)

NCIS RELATED OCCUPATIONS

1344	Postmasters and Mail Superintendents
4742	Postal Clerks
4743	Mail Carriers

WORK ACTIVITIES

- Sort incoming mail and open it.
- Stamp it with the date and time it was received.
- Sort mail into baskets and deliver it as directed.
- Pick up messages and outgoing mail as deliveries are made.
- Separate interoffice and outgoing mail.
- Seal and mark outgoing mail and determine correct postage.
- Keep records of all registered, certified, and insured mail.
- Package items in boxes or cartons.
- Take mail to post office.
- Deliver messages and handle clerical duties.

APTITUDES

- Be able to learn sorting and handling processes.
- Have average verbal abilities.
- Be able to handle precise details with accuracy and work within set standards.
- Have good space and form perception and finger and hand dexterity.
- Be able to lift light loads, reach for things, and see well.
- Be able to do repeated tasks on a routine basis.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours a week.
Employers
  Any business or firm which handles large amount of mail.

CONSIDERATIONS

- Job is good experience for advancing to other clerical positions.
- Mail clerks may have to stand and walk all day and the routine tasks may cause eyestrain and tiring.

NEBRASKA EMPLOYMENT

About 890 mail clerks are projected to be employed by 1991.

WAGES

Salaries for mail clerks will vary primarily due to the size of the business and the level of responsibility assigned to the position. In Nebraska, the lowest reported full-time salary is $7,592 a year, and the highest is $18,961. The median annual salary for all mail clerks in Nebraska is $10,777. Nationally, salaries are somewhat higher than Nebraska with a top range of $25,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors
  - The high turnover rate for this job and the growth of businesses will cause the demand for these workers.

PREPARATION

SKILLS

- Knowledge of sorting and mailing procedures.
- Skills in following and repeating a set routine.

- Skills in reading numbers and words accurately and quickly.
- Skills in recordkeeping.

TRAINING

- Most employers prefer high school graduates.
- Beginners receive on-the-job training.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, typing, data processing, and office education.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 163-164 and 187.
Guide for Occupational Exploration (2nd ed., 1984), pp. 463-469.
Occupational Outlook Handbook (1990-91 ed.), p. 262.

4751 DISPATCHERS

OCCUPATIONAL DESCRIPTION

Dispatchers relay information and orders to coordinate the movement of workers, motor vehicles, and freight. Some dis-patchers direct the activity of emergency vehicles; others coordinate service or delivery personnel or dispatch taxicabs to pick up passengers. Most dispatchers contact workers by two-way radio to relay messages. They keep records of requests and services performed.

HOLLAND CODE

ECS (Enterprising, Conventional, Social)

SPECIALTIES

Service Clerks (221.367-070)
Maintenance Service Dispatchers (239.367-014)
Motor Vehicle Dispatchers (249.167-014)
Radio Dispatchers (379.362-010)
Telecommunications (379.362-018)
Concrete Products Dispatchers (579.137-030)
Service or Work Dispatchers (952.167-010)
Military Dispatchers (M47510)

NCIS RELATED OCCUPATIONS

4732	Telephone Operators

WORK ACTIVITIES

- Receive reports or requests from customers or other employees.
- Relay information or orders to proper employees usually using a two-way radio.
- Maintain records of all incoming and outgoing calls and other related information such as destination, time of departure and arrival, and purpose of trip.
- Set up routes and assign vehicles and jobs.
- May have other clerical duties.

APTITUDES

- Be able to learn the procedures of dispatching and recordkeeping.
- Have average verbal and numerical abilities.
- Be able to relate to people in a friendly manner.
- Have good hearing and be able to speak clearly.
- Be able to keep accurate records.
- Be able to remain calm in emergencies and determine priorities rapidly.

WORK SETTING

Environment
    Work indoors in office areas.
Hours
    Work 40 hours a week; may include evenings, weekends, and holidays.
Employers
    Educational institutions, large corporation's government agencies, freight firms, large manufacturing firms, trucking companies, ambulance companies, utilities, bus lines, and taxicab companies.

CONSIDERATIONS

- Dispatchers spend most of the day sitting.

NEBRASKA EMPLOYMENT

About 1,970 dispatchers are projected to be employed by 1991.

WAGES

Salaries for dispatchers vary widely depending on the size and location of the business and the amount of experience or training of the dispatcher. In Nebraska salaries span a broad range of $9,200 to $22,000 a year. Nationally, starting salary ranges from $11,600 to $22,000.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Somewhat Favorable
Factors
- Most openings will be the result of the need for replacements.
- Competition is keen as there is usually a surplus of applicants.

PREPARATION

SKILLS

- Knowledge of dispatching procedures and assigning routes and vehicles.

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- Skills in recordkeeping.
- Skills in operating radios and recording equipment.
- Skills in listening and speaking clearly.
- Skills in dealing with people who may be under stress.
- Knowledge of the layout of the city or area.

TRAINING

- High school graduation is usually the minimum educational requirement.
- Employers provide on-the-job training for new workers.
- Previous work experience in the agency, company, or business is helpful.

EDUCATIONAL PROGRAM

158	Secretarial Programs
193	Journalism and Communications
196	Communications Technology
567	Criminal Justice
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, typing, office education, accounting, data processing, and business math.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 195, 201, 263, and 921.
Guide for Occupational Exploration (2nd ed., 1984), pp. 457-462.
Occupational Outlook Handbook (1990-91 ed.), p. 265.
Military Career Guide (1988-89 ed.), p. 102.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21803	College of Saint Mary
21504	Concordia College
21805	Creighton Unviersity
21606	Dana College
21507	Doane College
21808	Grace College of the Bible
21509	Hastings College
99817	Institute of Computer Science
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21325	Nebraska Christian College
44802	Nebraska College of Business
99301	Nebraska Law Enforcement Training Center
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
44805	Word Processing and Secretarial College
22517	York College

4752 PRODUCTION AND PLANNING CLERKS

OCCUPATIONAL DESCRIPTION

Production and planning clerks schedule work activities in a business to insure that production and service schedules are met. They estimate the number of workers and amount and type of materials needed and arrange for them to be provided. Also they schedule workers time and compile work reports. They may coordinate flow of materials and equipment between departments.

HOLLAND CODE

CRE (Conventional, Realistic, Enterprising)

SPECIALTIES

Crew Schedulers (215.362-010)
Assignment Clerks (215.367-010)
Personnel Schedulers (215.367-014)
Taxicab Coordinators (215.367-018)
Material Coordinators (221.167-014)
Production Coordinators (221.167-018)
Progress Clerks (221.362-022)
Printing Estimators (221.367-014)
Production Clerks (221.382-018)
Lumber Estimators (221.482-014)
Material Listers (229.387-010)
Military Maintenance Data Analysts (M47520)
Military Flight Operations Specialists (M47521)

NCIS RELATED OCCUPATIONS

3712	Industrial Engineering Technicians
4753	Traffic, Shipping, and Receiving Clerks
4754	Stock and Inventory Clerks

WORK ACTIVITIES

- Review production schedules and work orders.
- Plan work schedules, set priorities, and arrange for needed materials and equipment.
- Prepare and give work orders and schedules to departments.
- Compile and record information concerning production rate, efficiency, and quality control.
- Calculate the quantity produced amount of materials used, amount of materials left over, and output of workers.
- Write production reports and maintain files.

APTITUDES

- Be able to learn the methods of organizing production activities.
- Have good verbal and math abilities.
- Be able to check accuracy and see details.
- Have ability to coordinate, supervise, and organize activities, workers, and schedules.
- Be able to make decisions based on data and observations.
- Be able to work within set time limits.
- Have average space and form perception.

WORK SETTING

Environment
  Work indoors in production areas or offices.
Hours
  Work 40 hours a week; may include evening, weekend, or night shifts.
Employers
  Manufacturing firms and government agencies.

CONSIDERATIONS

- Job may require light lifting of loads weighing up to ten pounds.

NEBRASKA EMPLOYMENT

About 920 production and planning clerks are projected to be employed by 1991.

WAGES

In Nebraska, salaries for production and planning clerks range between $9,700 and $11,000 a year. Upon completion of employer sponsored on-the-job training, clerks may be advanced to a higher paid grade. Those with experience are generally hired at the higher salary figure. Nationally, average salaries range from $16,800 to $29,500 yearly.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Favorable

Factors

- Job openings may increase as companies try to improve production efficiency and quality.
- Growth in this area is affected by changes within the economy.

PREPARATION

SKILLS

- Knowledge of production needs, processes, and materials within the company where employed.
- Skills in supervision, coordination, planning, and scheduling.
- Skills in recordkeeping and report writing.
- Skills in evaluation and decision-making procedures.
- Skills in calculating.

TRAINING

- One to two years of postsecondary training is usually the minimum educational requirement.
- Employers provide on-the-job training for new workers.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

145	Business Administration & Management
253	Engineering Technologies
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, business math, algebra, geometry, accounting, office education, data processing, manufacturing, and construction.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 172, 180, 181, 183, and 190.

Guide for Occupational Exploration (2nd ed., 1984), pp. 233-239.

Military Career Guide (1988-89 ed.), pp. 103 and 105.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21509	Hastings College
11959	Hawkeye Institute of Technology
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Luteheran College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
44301	Spencer School of Business
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4753 TRAFFIC, SHIPPING, AND RECEIVING CLERKS

OCCUPATIONAL DESCRIPTION

Traffic, shipping, and receiving clerks keep track of all shipments of goods leaving or arriving at a place of business. They pack, weigh, label, dispatch articles, and make sure that shipments match orders. They determine shipping methods and direct loading items to be shipped. When ship-ments are received they keep records and unpack items and route them to their final destinations. Some may arrange for adjustments when goods are lost or damaged. DOT 222.387-050

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Grain Elevator Clerks (222.567-010)
Distributing Clerks (222.587-018)
Incoming-Freight Clerks (248.362-010)
Traffic Clerks (214.587-014)
Express Clerks (222.367-022)
Route-Delivery Clerks (222.587-034)
Photofinishing Laboratory Workers (976.687-018)
Military Shipping and Receiving Specialists (M47530)

NCIS RELATED OCCUPATIONS

4752	Production and Planning Clerks
4754	Stock and Inventory Clerks
8724	Stock Handlers and Baggers

WORK ACTIVITIES

- Check goods against shipping papers, invoices, and storage receipts.
- Examine goods for damage, set aside damaged articles, and fill out records on damage.
- Unpack shipments and send goods to storage or departments.
- Get goods ready for pickup, check sales slips, and make records.
- Prepare goods for delivery: inspect goods for damage, package and label them, and move goods to shipping docks.
- Plan and carry through methods of shipping.
- Prepare shipping papers, bills, and correspondence and keep files in order.

APTITUDES

- Be able to learn shipping procedures.
- Have average verbal and numerical abilities.
- Be able to check accuracy and see important details.
- Be able to do a variety of routine tasks within set time limits.
- Have ability to make decisions based on data.
- Be able to do medium lifting, stooping, and reaching.
- Have good space and form perception.

WORK SETTING

Environment
Work indoors or outdoors on loading platforms.
Hours
Work 40 hours a week; may include some evening, night, weekend, or holiday hours.
Employers
Manufacturing firms, retail stores, wholesale businesses, distribution warehouses, railroads, shipping and trucking companies, and airlines.

CONSIDERATIONS

- Long hours of standing and lifting are necessary.
- Work may be outdoors in all kinds of weather.
- Workers may be union members.

NEBRASKA EMPLOYMENT

About 5,260 traffic, shipping, and receiving clerks are projected to be employed by 1991.

WAGES

Salaries will vary widely for this occupation depending on the size, location and type of business. The amount of training and experience of the traffic, shipping and receiving clerk will also determine the salary level. In Nebraska, the lowest reported salary for a full time worker is $8,112 a year and the highest reported is $25,480 a year. The median salary for all traffic, shipping and receiving clerks is $14,685 a year. The

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highest salaries will be found in large manufacturing firms, railroads and distribution warehouses. Nationally, salaries range between $11,500 and $20,700 a year.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable
National
Unfavorable
Factors

- Most job openings will result from replacement needs.
- The demand for these workers may be limited because advanced technology allows more goods to be handled by fewer people.
- Most jobs for these clerks are found in cities that serve as trade and distribution centers for wider areas.

PREPARATION

SKILLS

- Knowledge of shipping procedures, the company's products and business practices, and government regulations related to shipping.
- Skills in recordkeeping and bookkeeping.
- Skills in typing or data processing and writing clearly.
- Skills in simple calculations.

TRAINING

- Most employers prefer high school graduates.
- Some employers require previous work experience with the firm.
- New clerks receive on-the-job training.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, business math, marketing, typing, accounting, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 187-188 and 200.
Guide for Occupational Exploration (2nd ed., 1984), pp. 233-239.
Occupational Outlook Handbook (1990-91 ed.), p. 267.
Military Career Guide (1988-89 ed.), p. 112.

4754 STOCK AND INVENTORY CLERKS

OCCUPATIONAL DESCRIPTION

Stock and inventory clerks receive, unpack, store, and issue goods and merchandise. The flow of supplies in and out of stock rooms is controlled by them. They report damaged goods, keep track of the number of items in storage, and reorder things that are in short supply. Also, they may check the items for quality and amount and make repairs or adjustments. Some-times they label, pack, crate, or address goods for delivery.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Stock-Control Clerks (219.367-034)
Parts Clerks (222.367-042)
Inventory Clerks (222.387-026)
Materials Clerks (222.387-034)
Stock Clerks (222.387-058)
Quality-Control Clerks (229.587-014)
Central-Supply Workers (381.687-010)
Military Stock and Inventory Specialists (M47540)

NCIS RELATED OCCUPATIONS

4752	Production and Planning Clerks
4753	Traffic, Shipping and Receiving Clerks
8724	Stock Handlers and Baggers
8726	Freight, Stock, and Material Movers
87692	Stores Laborers

WORK ACTIVITIES

- Unpack new items, check them against invoices, and inspect them for damage.
- Mark items and place in storage areas.
- Issue requested items from stockroom or deliver them.
- Keep records of items issued, dates issued, and to whom they were given.
- Pack items for shipment and send to shipping departments.
- Keep records of incoming and outgoing materials and take inventories.
- Order replacement supplies.

APTITUDES

- Be able to learn procedures of the stock department.
- Have average verbal and numerical abilities.
- Be able to keep orderly, accurate records.
- Have physical coordination and good space and form perception.
- Be able to make decisions using facts.
- Be able to do routine work in set time limits.
- Have ability to do reaching, stooping, and heavy lifting.

WORK SETTING

Environment
Work indoors; some locations may be cold in the winter and hot in the summer.
Hours
Work 40 hours a week; may include evening and weekend hours.
Employers
Manufacturing companies, wholesale and retail businesses, government agencies, educational institutions, and hospitals.

CONSIDERATIONS

- Stock and inventory clerks who handle jewelry, drugs, or liquor must be bonded.
- Work involves standing, stooping, reaching, and lifting of up to 100 pounds.
- These clerks are often promoted to higher positions.

NEBRASKA EMPLOYMENT

About 5,030 stock and inventory clerks are projected to be employed by 1991.

WAGES

In Nebraska, the lowest reported salary for a stock and inventory clerk employed full time is $9,173, and the highest reported is $27,290. The median salary for all stock and inventory clerks in Nebraska is $14,040. National salary averages range from $6,900 to $20,500 a year.

EMPLOYMENT GROWTH

Nebraska
Unfavorable

National

Somewhat Favorable

Factors

- Many openings arise from replacement needs because of the high turnover rate in this rather large occupation.
- Increased use of computers for inventory control is expected to limit the growth of this occupation.
- Keen competition for available jobs because little training is needed to get into this occupation.

PREPARATION

SKILLS

- Knowledge of stock department procedures.
- Skills in writing clearly and doing simple arithmetic.
- Skills in typing, filing, and recordkeeping.
- Skills in following written and spoken directions.

TRAINING

- Most employers prefer to hire applicants who are high school graduates.
- On-the-job training is provided for new clerks.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, accounting, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 187-188, 190, and 264.
Guide for Occupational Exploration (2nd ed., 1984), pp. 233-239.
Occupational Outlook Handbook (1990-91 ed.), p. 266.
Military Career Guide (1988-89 ed.), p. 249.

4755 METER READERS

OCCUPATIONAL DESCRIPTION

Meter readers go to homes and businesses to check meters that record the amount of electricity, steam, gas, or water used by customers. They record the amount used and check for any damage to the meters. They may walk or drive a vehicle along their assigned routes. Some may collect overdue payments and stop service when bills remain unpaid. DOT 209.567-010

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

NCIS RELATED OCCUPATIONS

6158 Telephone Installers and Repairers

WORK ACTIVITIES

- Drive or walk along assigned routes.
- Record readings appearing on meters or computers or books.
- Return recordings to business office each day.
- Inspect meter for defects, damage, or unauthorized connections.
- Report unusual usage and try to determine reasons for changes in use.
- May disconnect or restore service.
- May make minor repairs or adjustments.
- May collect late bills.

APTITUDES

- Be able to learn methods of meter reading and the mechanical operation of meters.
- Have average ability with words and numbers.
- Be able to handle detailed work accurately.
- Be able to work within exact standards and set time limits.
- Be able to do work which is routine and repetitive.

WORK SETTING

Environment
    Work mainly outdoors.
Hours
    Work 40 hours a week.
Employers
    Utility companies and government agencies.

CONSIDERATIONS

- Meter readers work outdoors in all types of weather.
- Workers may face the risk of accidents due to animals or hazards on a customer's property.
- Most employers require these workers to have a valid driver's license.

NEBRASKA EMPLOYMENT

About 460 meter readers are projected to be employed by 1991.

WAGES

In Nebraska, wages for meter readers range between $13,500 and $17,100 a year. Nationally, the wage range is somewhat broader at $8,700 to $19,000 a year.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Unfavorable
Factors
- The growing use of automatic readings and a move toward fewer readings will lower the demand for these workers.

PREPARATION

SKILLS

- Knowledge of meter reading and recording methods and meter construction and repair.
- Skills in recordkeeping and computation.
- Skills in following written and spoken directions.
- Skills in dealing with customers who may complain or refuse to pay their bills.

TRAINING

- The minimum educational requirement is high school graduation.
- Workers learn their duties through on-the-job training.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631 Apprenticeship Training
632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, basic or business math, energy/ power systems, and office education.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 163.
Guide for Occupational Exploration (2nd ed., 1984), pp. 233-239.
Occupational Outlook Handbook (1990-91 ed.), p. 453.

4782 INSURANCE ADJUSTERS, EXAMINERS, AND INVESTIGATORS

OCCUPATIONAL DESCRIPTION

Insurance adjusters, examiners, and investigators review and process loss or damage claims against insurance companies. First, they see whether a clients' policy covers them for particular losses. They also determine the amount of loss and talk with claimants to settle claims. They use reports, physical evidence, and witnesses, reports to investigate claims. Some workers travel while others work mostly at their desks. Many specialize in a certain type of claim such as auto, property, or life damage or loss.

HOLLAND CODE

ESC (Enterprising, Social, Conventional)

SPECIALTIES

Claims Clerks II (205.367-018)
Claim Adjusters (241.217-010)
Automobile Damage Appraisers (241.267-014)
Claim Examiners (241.267-018)
Claims Clerks I (241.362-010)

NCIS RELATED OCCUPATIONS

1414	Underwriters
4122	Insurance Sales Agents
4440	Appraisers

WORK ACTIVITIES

- Determine policy coverage
- Investigate amount and causes of damages and determine extent of liability of parties involved.
- Negotiate settlements and settle claims.
- Prepare reports of findings and action taken on each claim.
- Participate in preparing for legal proceedings.
- Handle subrogation procedures against other insurance companies.

APTITUDES

- Be able to learn basics of claims adjusting and insurance coverages.
- Have good verbal and numerical abilities.
- Be able to work accurately with detail.
- Have good space and form perception and physical coordination.
- Be able to make decisions based on facts and observations.
- Be able to work with a variety of people who may be angry or abusive.

WORK SETTING

Environment
Work indoors in offices or outdoors at inspection sites; may travel frequently.
Hours
Work 40 hours a week usually; may be on call 24 hours a day; may have to work longer hours during disasters.
Employers
Insurance companies and independent adjusting firms.

CONSIDERATIONS

- At times, hours may be long and irregular.
- May have to deal with difficult claimants.
- Most workers are assigned a company car or are paid for using their own car.
- Job requires work without direct supervision most of the time.
- These workers must have good driving records and valid drivers' permits.

NEBRASKA EMPLOYMENT

About 2,370 insurance adjusters, examiners, and investigators are projected to be employed by 1991.

WAGES

In Nebraska the starting salary range for insurance adjusters, examiners, and investigators spans a range between $13,500 and $21,000 a year. The starting wage will be determined by the size and location of the insurance company as well as the educational background of the candidate. Nationally, salaries are somewhat higher with a range of $19,200 to $29,000 a year.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Favorable
Factors

- The outlook depends on the continued growth of both the insurance industry and the population in general.
- Automation is not expected to affect the demand for adjusters, examiners, and investigators because of the personal and detailed nature of their work.

PREPARATION

SKILLS

- Knowledge of insurance policies and procedures for adjusting claims.
- Knowledge of laws and regulations governing the insurance industry.
- Skills in using investigative procedures.
- Skills in negotiating and dealing with people.
- Skills in data analysis, report writing, and decision making.

TRAINING

- Many employers require employees to be college graduates, but some firms hire graduates with work experience in the building trades or auto body repair.
- No specific field of study in college is recommended.
- Most companies provide on-the-job training.

EDUCATIONAL PROGRAM

145	Business Administration & Management
148	Insurance
157	Accounting
278	Vehicle & Mobile Equipment Mechanics
288	Construction Trades

HELPFUL HIGH SCHOOL SUBJECTS

Follow a college preparatory curriculum including courses in composition, speech, geometry, economics, psychology, construction, accounting, data processing, auto services, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 157 and 196-197.

Guide for Occupational Exploration (2nd ed., 1984), pp. 571-574.

Occupational Outlook Handbook (1990-91 ed.), p. 244.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21509	Hastings College
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
44301	Spencer School of Business
21717	Union College
99827	Universal Technical Institute
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

4791 BANK TELLERS

OCCUPATIONAL DESCRIPTION

Bank tellers handle transactions for customers of banks and other financial institutions. They help customers by cashing checks, receiving deposits, and paying out withdrawals. In small banks, they may sort checks, keep accurate records, and prepare monthly statements. In large banks, tellers often specialize in areas such as selling savings bonds, handling foreign money, on figuring interest on savings accounts. DOT 211.362-018

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

SPECIALTIES

Collection and Exchange Tellers (211.362-022)
Note Tellers (211.362-026)

NCIS RELATED OCCUPATIONS

1415 Loan Officers
4364 Cashiers

WORK ACTIVITIES

- Obtain an amount of cash and verify the amount.
- Receive and process checks and cash for deposit into accounts.
- Cash checks after verification and endorsement.
- Withdraw money from accounts and record transactions.
- Sell and cash traveler's checks, savings bonds, and cashier's checks.
- Exchange foreign currency.
- Accept payments on loans.
- Open new accounts and close out accounts.
- Sort checks and deposit slips, count cash on hand, and balance days accounts.

APTITUDES

- Be able to learn banking procedures.
- Have above average numerical ability.
- Be able to meet and work well with the public.
- Have good eye-hand coordination and finger dexterity.
- Be able to work accurately with detail.
- Be able to perform the same tasks repeatedly.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours a week; may have evening and weekend hours; part-time work is often available.
Employers
  Banks, savings and loans, credit unions, and other financial institutions.

CONSIDERATIONS

- Job gives a beginning worker good business experience.
- Tellers may have to stand for long periods.
- Worker may be under pressure in making sure the cash drawers balance at the end of the day and in dealing with customers during rush hours.

NEBRASKA EMPLOYMENT

About 3,510 bank tellers are projected to be employed by 1991.

WAGES

In Nebraska the lowest reported salary for bank tellers working full time was $9,797 a year. The highest reported salary was $18,637 a year. The median salary for all full time bank tellers is $12,002 a year. Nationally, salaries range from $8,500 to $18,700 with an average of $12,000.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Somewhat Favorable
Factors
- Most openings will result from the need for replacement workers, and there is a high turnover rate in this occupation.
- Competition is keen because of entry-level requirements for tellers are low.
- The outlook depends on expansion of business and banking activities and use of automated teller machines.

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PREPARATION

SKILLS

- Knowledge of banking, accounting, and bookkeeping procedures.
- Skills in recordkeeping and arithmetic.
- Skills in handling money.
- Skills in using business machines.
- Skills in dealing with the public.

TRAINING

- Most employers prefer applicants who are high school graduates and at least 18 years old.
- Most training is offered on the job.

EDUCATIONAL PROGRAM

143	Banking and Finance
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, business math, accounting, typing, office education, data processing, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 166-167.
Guide for Occupational Exploration (2nd ed., 1984), pp. 454-456.
Occupational Outlook Handbook (1990-91 ed.), p. 248.

SCHOOLS

21805	Creighton University
21606	Dana College
22803	Metropolitan Community College
22708	Southeast Community College-Beatrice Campus
44301	Spencer School of Business
44826	Teller Training Institute
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College

4792 PROOFREADERS

OCCUPATIONAL DESCRIPTION

Proofreaders read written or typed materials to check for mistakes. They either mark the errors they find or correct them. Some use special codes to mark the errors in grammar, spelling, and punctuation they find. Others read trial copies aloud so another worker can mark the errors. DOT 209.387-030

HOLLAND CODE

CSE (Conventional, Social, Enterprising)

SPECIALTIES

Braille Proofreaders (209.367-014)
Copy Holders (209.667-010)
Production Proofreaders (247.667-010)

WORK ACTIVITIES

- Mark errors in typing, grammar, or composition using a standardized code.
- May place proof and original copy side by side and read proof against the copy.
- May correct proof while another person reads aloud from the original copy.
- May work at a computer and mark or correct copy on the screen.

APTITUDES

- Be able to learn methods of proofreading and the standardized marking code.
- Have good verbal abilities.
- Be able to do detailed work accurately.
- Have good space and form perception.
- Be able to make decisions based on set standards and work within set limits.
- Have normal vision.

WORK SETTING

Environment
  Work indoors in offices.
Hours
  Work 40 hours a week; part-time work is usually available.
Employers
  Printing companies, publishers, quick-print firms, publications offices, advertising agencies, and typesetting firms.

CONSIDERATIONS

- Job may be satisfying from working to improve a quality of printed materials.
- Work may require long periods of concentration and sitting which may lead to eyestrain.
- There may be pressure to meet deadlines.

NEBRASKA EMPLOYMENT

About 230 proofreaders are projected to be employed by 1991.

WAGES

Salaries for proofreaders vary widely in Nebraska depending on the size of the publisher, or firm or agency with a range between $11,000 and $19,000 a year. Nationally, the salary range is slightly broader at $9,000 to $20,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Unfavorable
Factors
  - Most openings will come from replacement needs.
  - The increased use of computer technology and automation has reduced the need and time for checking copy.

PREPARATION

SKILLS

- Knowledge of the methods of proofreading and the marking code.
- Knowledge of grammar, punctuation, spelling, and vocabulary.
- Skills in reading words quickly and accurately.

TRAINING

- The minimum educational requirement is high school graduation.
- Some college training is generally preferred for employment and is needed for job advancement.
- Training is usually given on the job.

EDUCATIONAL PROGRAM

156	Typing and General Office
158	Secretarial Programs
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, grammar, journalism, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 161, 163, 164, and 199.

Guide for Occupational Exploration (2nd ed., 1984), pp. 463-469.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21808	Grace College of the Bible
99817	Institute of Computer Science
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21325	Nebraska Christian College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
44805	Word Processing and Secretarial College
22517	York College

4793 DATA ENTRY KEYERS

OCCUPATIONAL DESCRIPTION

Data entry keyers use machines similar to typewriters to transcribe information into a form suitable for processing by a computer system. They may enter the data directly into a computer or may record data on magnetic tapes or disks.

HOLLAND CODE

CSR (Conventional, Social, Realistic)

SPECIALTIES

Data Typists (203.582-022)
Data-Coder Operators (203.582-026)
Keypunch Operators (203.582-030)
Magnetic-Tape-Typewriter Operators (203.582-034)
Terminal Operators (203.582.054)
Electronic-Typesetting-Machine Operators (203.582-074) (47931)
Terminal-System Operators (203.362-018)
Varitype Operators (203.382-026)
Military Data Entry Specialists (M47930)

NCIS RELATED OCCUPATIONS

4612	Computer Operators
4624	Typists
46241	Clerk-Typists
46242	Word-Processing-Machine Operators

WORK ACTIVITIES

- Prepare machine for data inputting.
- Type materials and commands.
- Proofread a printout.
- Correct any errors.
- Load completed disks or tapes into computer or enter data directly into computer.

APTITUDES

- Be able to learn basic computer operations and word processing commands.
- Have good verbal and numerical abilities.
- Be able to do repetitious work quickly and accurately.
- Have good eye-hand coordination.
- Be able to check accuracy and see details.
- Be able to work within set standards.

WORK SETTING

Environment
Work indoors in offices.
Hours
Work 40 hours a week; may include evening and night shifts; part-time work may be available.
Employers
Data processing firms, government agencies, manufacturers, insurance companies, financial institutions, wholesale and retail businesses, and educational institutions.

CONSIDERATIONS

- Work is often done in noisy office areas.
- Job requires sitting for long periods of time.
- There maybe pressure to meet deadlines.

NEBRASKA EMPLOYMENT

About 3,430 data entry keyers are projected to be employed by 1991.

WAGES

In Nebraska, salaries for data entry keyers range between $11,856 and $18,500 a year depending on the size and location of the business as well as the amount of training completed by the individual. Nationally, salaries parallel those of Nebraska with a range of $11,600 to $18,300 yearly.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Somewhat Favorable
Factors
- Most openings will result from replacement needs.
- Improvements in data processing technology enable employers to handle more data with fewer data entry keyers.
- This occupation has a high turnover rate.

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PREPARATION

SKILLS

- Knowledge of data entry equipment and data processing commands and terminology.
- Skills in typing and data entry.
- Skills in proofreading.
- Skills in using correct spelling, grammar, and punctuation.

TRAINING

- The minimum educational requirement is high school graduation and the ability to type.
- Some employers require applicants to have training in data entry machine operation.
- New employees receive on-the-job training.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

151	Word Processing
155	Business Data Processing
156	Typing and General Office
158	Secretarial Programs
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, grammar, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 155-156.
Dictionary of Occupational Titles (4th ed., supplement, 1986), p. 23.
Guide for Occupational Exploration (2nd ed., 1984), pp. 470-473.
Occupational Outlook Handbook (1990-91 ed.), p. 282.
Military Career Guide (1988-89 ed.), p. 101.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21808	Grace College of the Bible
99817	Institute of Computer Science
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21325	Nebraska Christian College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
44805	Word Processing and Secretarial College
22517	York College

47931 ELECTRONIC-TYPESETTING-MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Electronic-typesetting-machine operators run electronic typesetting machines and other equipment such as photocomposing and developing machines to produce copy of publications. DOT 203.582-074

HOLLAND CODE

CRS (Conventional, Realistic, Social)

NCIS RELATED OCCUPATIONS

4612	Computer Operators
4624	Typists
46241	Clerk-Typists
46242	Word-Processing-Machine Operators
4793	Data Entry Keyers
7642	Typesetting and Composing Machine Operators

WORK ACTIVITIES

- Determine machine settings required.
- Load disk or tape into electronic typesetting machine.
- Set length and thickness of printed lines.
- Input material and scan screen to monitor input.
- Proofread and correct or delete errors.
- Load completed disk or tape in photocopying machine and make copies.
- Proofread developed copies and correct errors.

APTITUDES

- Be able to learn basic computer operations and word processing commands.
- Have good verbal and numerical abilities.
- Be able to work with details accurately.
- Have good hand and finger coordination.
- Be able to make decisions based on facts and work according to set standards.

WORK SETTING

Environment

Work indoors in offices.

Hours

Work 40 hours a week; evening and night shifts are possible; part-time work may be available.

Employers

Insurance companies, government agencies, educational institutions, printing and publishing companies, financial institutions, industries, and businesses.

CONSIDERATIONS

- Work involves sitting for long periods of time.
- Work may be done in noisy computer areas.
- Operators may be under pressure to meet deadlines.

NEBRASKA EMPLOYMENT

About 200 electronic-typesetting-machine operators are projected to be employed by 1991.

WAGES

In Nebraska, salaries for electronic-typesetting-machine operators span a range between $13,150 and $19,970 a year. Nationally, salaries tend to parallel those of Nebraska, with an average wage of $17,650 per year.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National

Favorable

Factors

- Growth will occur as businesses change to computerized typesetting equipment.

PREPARATION

SKILLS

- Knowledge of electronic-typesetting machines and related equipment.
- Skills in data entry.
- Skills in reading words quickly and accurately, and proofreading.
- Skills in using correct spelling, grammar, and punctuation.

TRAINING

- The minimum educational requirement is usually high school graduation and the ability to type.
- On-the-job training is usually provided.
- Some employers prefer applicants that have training in data entry machine operation.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

151	Word Processing
155	Business Data Processing
156	Typing and General Office
158	Secretarial Programs.
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, grammar, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., supplement, 1986), p. 23.
Guide for Occupational Exploration (2nd ed., 1984), pp. 470-473.
Occupational Outlook Handbook (1990-91 ed.), p. 412.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21808	Grace College of the Bible
99817	Institute of Computer Science
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21325	Nebraska Christian College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
44805	Word Processing and Secretarial College
22517	York College

4794 STATISTICAL CLERKS

OCCUPATIONAL DESCRIPTION

Statistical clerks compile numbers that describe things or events and put them in table form for charts and graphs. They may use adding machines, calculators, or com-puters. Some help prepare directories, medical reports, opinion polls, or census reports. Others figure the amount of electricity used by customers or the amount of money that should be budgeted for projects.
DOT 216.382-062

HOLLAND CODE

CSR (Conventional, Social, Realistic)

SPECIALTIES

Budget Clerks (216.382-022)
Advertising Statistical Clerks (216.382-066)
Medical-Record Clerks (245.362-010)

NCIS RELATED OCCUPATIONS

1732	Actuaries
1733	Statisticians
1739	Mathematicians
4712	Bookkeepers and Accounting and Auditing Clerks

WORK ACTIVITIES

- Gather statistics from various sources.
- Arrange and classify statistics following set procedures.
- Figure statistical data according to formulas.
- Prepare graphs and tables.
- Sort, code, and file different kinds of information.
- Authentic sources of material for accuracy.

APTITUDES

- Be able to learn the methods of compiling, figuring, and classifying statistics.
- Have good ability to work with numbers.
- Be able to work accurately with details and to be precise while working within set standards.
- Be able to perform the same tasks continuously.
- Have average space and form perception and general finger and hand coordination.

WORK SETTING

Environment
  Work indoors in offices.
Hours
  Work 40 hours a week.
Employers
  Hospitals, colleges and universities, government agencies, insurance companies, actuarial firms, research centers, market research firms, utility companies, financial institutions, and large businesses.

CONSIDERATIONS

- Work requires long periods of concentration and allows little room for error.
- Statistical clerks sit for much of the work day.

NEBRASKA EMPLOYMENT

About 700 statistical clerks are projected to be employed by 1991.

WAGES

In Nebraska, starting wages for statistical clerks range between $10,400 and $12,900 a year. Nationally, salaries span a much broader range between $14,000 and $22,200 a year.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors
- Future employment growth will be limited because of the growing use of computers for statistical work.
- The outlook depends on economic conditions and the number of openings created by replacement needs.
- Those with accounting backgrounds and computer skills will fare best.

PREPARATION

SKILLS

- Knowledge of the procedures used in compiling, arranging, classifying, and figuring statistical data.
- Skills in making charts and graphs.
- Skills in typing and word processing.
- Skills in accounting and math.
- Skills in using office machines.

TRAINING

- The minimum educational requirement is a high school diploma.
- Many employers prefer applicants with additional training or related work experience.

EDUCATIONAL PROGRAM

155	Business Data Processing
157	Accounting
158	Secretarial Programs
481	Mathematics

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, accounting, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 174.
Guide of Occupational Exploration (2nd ed., 1984), pp. 449-453.
Occupational Outlook Handbook (1990-91 ed.), p. 453.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21808	Grace College of the Bible
21509	Hastings College
99817	Institute of Computer Science
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21325	Nebraska Christian College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
44805	Word Processing and Secretarial College
22517	York College

4795 TEACHER AIDES

OCCUPATIONAL DESCRIPTION

Teacher aides provide classroom and clerical assistance to teachers. Job duties vary. They do such things as listen to students read, help students find inforamtion, and prepare special classroom projects. They also grade papers, check homework, and keep attendance records. Some type, file, and copy materials for teachers to use. They may also prepare teaching materials, set up equipment, and superivse students during lunch and recess.

HOLLAND CODE

CES (Conventional, Enterprising, Social)

SPECIALTIES

Teacher Aides I (099.327-010)
Teacher Aides II (249.367-074)

NCIS RELATED OCCUPATIONS

20324	Case Aides
2310	Prekindergarten and Kindergarten Teachers
2320	Elementary School Teachers
2330	Secondary School Teachers
2350	Special Education Teachers
5060	Child Care Workers
5264	Child Care Providers

WORK ACTIVITIES

- Read to students.
- Keep attendance records.
- Prepare instructional materials.
- Give students individual help.
- Set up and operate materials and equipment.
- Compute and record grades.
- Oversee students in halls, lunchrooms, playgrounds, classrooms, and bus loading and unloading areas.
- See that classrooms are furnished with needed materials.
- Grade homework and tests.

APTITUDES

- Be able to learn the procedures of assisting the teaching staff.
- Have good verbal and numerical abilities.
- Be able to check written materials accurately.
- Have ability to perform a variety of tasks in a limited time period.
- Be able to work with children and adults.

WORK SETTING

Environment
    Work indoors in classrooms and outdoors on playgrounds and bus stop areas.
Hours
    Most work fewer than 40 hours a week.
Employers
    Public and private schools.

CONSIDERATIONS

- Workers in this job have time off during summers and on school holidays, but they usually are not paid for these days.

NEBRASKA EMPLOYMENT

About 4,840 teacher aides are projected to be employed by 1991.

WAGES

In Nebraska, salaries for teacher aides range between $7,900 and $12,400 a year. The low salary figures reflect the part time nature of this occupation. Nationally, average wages range from $6.00 to $6.40 an hour and most teacher aids are employed only part time.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Favorable
Factors
- Enrollment increases may help this occupation grow.
- Employment outlook depends on the amount of government funding for education.
- This occupation has a high turnover rate.
- Those applicants who have training or experience in working with handicapped students may have an advantage.

PREPARATION

SKILLS

- Knowledge of some teaching methods, activities, and materials.
- Knowledge of classroom routines.
- Skills in typing, filing, recordkeeping, and operating duplicating equipment.
- Skills in operating audio-visual equipment.
- Skills in speaking and writing.

TRAINING

- High school graduation is the minimum educational requirement.
- Completion of training programs in teacher assisting or clerical skills may be helpful.
- Employers usually provide on-the-job training for new workers.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

156	Typing and General Office
234	Teacher Education, General Programs
235	Teacher Education, Specific Subject Areas
237	Special Education
397	Child Care and Guidance Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, health, music, physical education, arts and crafts, child care, typing, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 72 and 203.
Guide for Occupational Exploration (2nd ed., 1984), pp. 444-448.
Occupational Outlook Handbook (1990-91 ed.), p. 279.

SCHOOLS

21801	Bellevue College
22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21808	Grace College of the Bible
21509	Hastings College
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
99332	Nannies of Nebraska
21325	Nebraska Christian College
44802	Nebraska College of Business
21714	Nebraska Wesleyan University
22306	Northeast Community College
99830	Omaha Opportunities Industrialization Center, Inc.
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus
22517	York College

5020 DAY WORKERS

OCCUPATIONAL DESCRIPTION

Day workers do housecleaning chores, make beds, care for children, cook, and perform other services in private homes. They are hired by the hour or day and often have several employers. Some specialize in a certain type of service such as house-cleaning, but the duties of most workers change from day to day. DOT 301.687-014

HOLLAND CODE

RES (Realistic, Enterprising, Social)

NCIS RELATED OCCUPATIONS

5060	Child Care Workers
5242	Housekeeping Cleaners
5244	Janitors and Cleaners

WORK ACTIVITIES

- Clean and dust furnishings, living areas, and bathrooms.
- Change and make beds.
- Wash and iron clothing by machine or hand.
- May watch children.
- May wash windows and wax and polish floors.

APTITUDES

- Be able to learn the procedures of housecleaning and child care.
- Have average use of hands and eye-hand coordination.
- Be able to do a variety of tasks in a limited period of time.
- Be able to work well with people.

WORK SETTING

Environment
Work indoors; travel to clients' homes.
Hours
Work hours vary depending upon employers; many work part-time.
Employers
Private households and companies that provide housecleaning services.

CONSIDERATIONS

- Day workers stand most of the time and do reaching, stooping, and lifting of light loads weighing up to twenty-five pounds.
- Job offers opportunity to work independently and set own schedule.
- There is a lack of advancement opportunities and benefits in this occupation.

NEBRASKA EMPLOYMENT

About 820 day workers are projected to be employed by 1991.

WAGES

In Nebraska, wages will vary due to the part time nature of this occupation. Hourly wages of between $3.80 and $4.25 per hour are quite common. Nationally, two-thirds of the day workers are employed only part time. The average annual salary is $6,240. Most day workers have very limited or no health insurance, retirement plans, or unemployment compensation but may have other benefits such as room and board or carfare.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Favorable
Factors
- The outlook depends on the level of personal incomes, replacement of those who leave the occupation, and the type of service provided.
- The growing numbers of elderly people who may require domestic services may increase demand.
- The turnover rate is high.

PREPARATION

SKILLS

- Knowledge of housecleaning procedures and equipment.
- Skills in planning and organizing work.
- Skills in following oral and written instuctions.
- Skills in cooking, washing, and ironing.

TRAINING

- Most employers prefer people who are neat, clean, trustworthy, and in good health.
- Character references are usually required.
- Most skills can be learned at home or through home economics courses offered in high schools and informally on the job.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, home economics education, child care, foods, clothing and textiles, and health.

BIBIOLOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 223.'
Guide for Occupational Exploration (2nd ed., 1984), pp. 262-275.
Occupational Outlook Handbook (1990-91 ed.), p. 316.

5060 CHILD CARE WORKERS

OCCUPATIONAL DESCRIPTION

Child care workers perform a combination of duties to take care of children in private homes. They may care for one or more children in an employer's home or in their own homes.

HOLLAND CODE

SEC (Social, Enterprising, Conventional)

SPECIALTIES

Child Monitors (301.677-010)
Foster Parents (309.677-014)

NCIS RELATED OCCUPATIONS

2310	Prekindergarten and Kindergarten Teachers
4795	Teacher Aides
5020	Day Workers
5264	Child Care Providers

WORK ACTIVITIES

- Observe and monitor play activities.
- Amuse children by reading to or playing games with them.
- Prepare and serve meals.
- Dress or assist children in dressing.
- Accompany children on outings.
- May wash and iron clothing.
- May keep children's quarters clean.

APTITUDES

- Be able to learn procedures of child care and nurturing.
- Have good use of hands and physical stamina.
- Be able to work with a variety of people.
- Have average use of words and numbers.
- Be able to work under stress.
- Be able to make decisions and exercise good judgement.
- Be able to change from task to task frequently.

WORK SETTING

Environment
Work indoors and occasionally outdoors.

Hours
Work 40 or more hours a week; may work evenings, weekends, and holidays depending upon employer; part-time work is available.

Employers
Private individuals and households and self-employed.

CONSIDERATIONS

- Work includes stooping, kneeling, crawling, crouching, and lifting of medium loads weighing up to fifty pounds.
- Adjustments may be possible for those with physical handicaps.

NEBRASKA EMPLOYMENT

About 310 child care workers are projected to be employed by 1991.

WAGES

In Nebraska, salaries for child care workers range between $7,400 and $9,100 a year. Nationally, salaries span a much broader range of $7,500 to $16,000 a year.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Favorable
Factors

- The employment outlook depends on the number of families with both parents working and the birth rate.
- This occupation has a high turnover rate.

PREPARATION

SKILLS

- Knowledge of child care procedures and the needs of children of different ages.
- Skills in planning and and organizing activities.
- Skills in maintaining discipline.
- Skills in recognizing symptoms of illnesses and diseases.

LICENSING OR CERTIFICATION

- For individuals who care for four or more unrelated children, a license from the Nebraska Department of Social Services is required. Requirements vary according to type of child care facility.

TRAINING

- There may be no educational requirements, but experience with children and excellent health is usually required.
- Some employers require references.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

397	Child Care and Guidance Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in psychology, physical education, health, arts and crafts, music, and child care.

BIBIOLOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 223.
Guide for Occupational Exploration (2nd ed., 1984), pp. 519-522.
Occupational Outlook Handbook (1990-91 ed.), p. 307.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
21102	Chadron State College
22402	McCook Community College
22803	Metropolitan Community College
99332	Nannies of Nebraska
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
21821	University of Nebraska at Omaha
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus

5123 FIRE FIGHTERS

OCCUPATIONAL DESCRIPTION

Fire fighters work as members of a team to control and put out fires and to protect lives and property. They use firefighting equipment such as hoses, ladders, chemicals, axes, and crowbars to fight fires. They may operate emergency vehicles or parachute from planes. They clean and service their equipment, take part in fire drills and training programs, and inspect areas for fire hazards. Also, they give first aid to injured people.
DOT 373.364-010

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Crash, Fire, and Rescue Fire Fighters (373.663-010)
Forest-Fire Fighters (452.687-014)
Military Fire Fighters (M51230)

NCIS RELATED OCCUPATIONS

3690	Health Technologists and Techicians
36906	Emergency Medical Technicians

WORK ACTIVITIES

- Inspect buildings for violations of fire codes.
- Speak to groups about fire prevention and safety measures.
- Travel to scene of the fire quickly.
- Lay and connect hose lines and nozzles.
- Position ladders for rescue and fire fighting operations.
- Operate pressure pumps.
- Lead or carry persons to safety.
- Administer first aid.
- Restore vehicles and equipment to emergency readiness.

APTITUDES

- Be able to learn fire fighting techniques.
- Have good space and form perception.
- Be able to make decisions based on experience.
- Have good physical coordination and strength, manual dexterity, vision, and hearing.
- Be able to handle a variety of responsibilities and to work under stress.

WORK SETTING

Environment
    Work indoors and outdoors.
Hours
    Work 40 to 56 hours a week depending on employer; usually includes irregular shifts including evenings, nights, weekends, and holidays.
Employers
    City fire departments, rural fire departments, large manufacturing firms, airports, and federal agencies such as the National Forest Service.

CONSIDERATIONS

- This occupation may provide a sense of adventure and satisfaction from helping people in crises.
- Fire fighting is a dangerous occupation.
- Work is done in all kinds of weather.

NEBRASKA EMPLOYMENT

About 420 fire fighters are projected to be employed by 1991.

WAGES

In Nebraska, starting salaries for fire fighters range between $14,000 and $23,500 a year. Nationally, beginning full time fire fighters earned an average of $18,600 a year, with maximum salaries ranging up to $24,100 a year.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Somewhat Favorable
Factors
- The outlook depends on local funding and replacement of those who leave the occupation.
- Better opportunities exist in smaller or rural towns.
- Competition is keen especially in urban areas.

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PREPARATION

SKILLS

- Knowledge of fire fighting methods, fire prevention principles, emergency medical techniques, and inspection procedures.
- Knowledge of related laws and ordinances and geography of the area.
- Skills in using and maintaining equipment.
- Skills in recordkeeping.
- Skills in driving fire trucks.

TRAINING

- High school graduation is usually required for employment.
- Job applicants must pass a civil service exam; a medical exam; and tests of strength, physical stamina, and agility and also must meet age, height, and weight requirements.
- Training is usually given in a fire school program.
- Some fire departments offer three-or four-year apprenticeship training programs.

EDUCATIONAL PROGRAM

569	Fire Protection
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in math, chemistry, physical education, health, and small engines.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 254 and 284.
Guide for Occupational Exploration (2nd ed., 1984), pp. 156-159.
Occupational Outlook Handbook (1990-91 ed.), p. 286.
Military Career Guide (1988-89 ed.), p. 122.

SCHOOLS

22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
21821	University of Nebraska at Omaha

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5132 POLICE AND DETECTIVES

OCCUPATIONAL DESCRIPTION

Police and detectives enforce the law, prevent crime, and protect the public. Their duties range from controlling traffic to solving criminal cases. Many specialize in a particular work area such traffic safety, narcotics, and vice. Some work in special units such as motorcycle squads, youth aid services, or rescue squads. Work duties vary.

HOLLAND CODE

SER (Social, Enterprising, Realistic)

SPECIALTIES

Customs Patrol Officers (168.167-010)
Highway Patrol Pilots (375.163-014)
Special Agents (375.167-042)
Police Officers I (375.263-014)
State-Highway Police Officers (375.263-018)
Detectives (375.267-010)
Border Guards (375.363-010)
Military Special Agents (M51320)
Military Detectives (M51322)
Military Police (M51321)

NCIS RELATED OCCUPATIONS

2110	Lawyers
5133	Correctional Institution Officers
5134	Sheriffs, Bailiffs, and Law Enforcement Officers
5144	Guards

WORK ACTIVITIES

- Respond to emergencies and reports of criminal actions.
- Resolve conflicts.
- Facilitate the movement of people and vehicles.
- Assist people in danger of physical harm.
- Watch for evidence of problems or disorders.
- Apprehend offenders and participate in court proceedings.
- Reduce crime through preventive measures.
- Complete reports.
- Investigate crimes and gather evidence.

APTITUDES

- Be able to learn law enforcement procedures and methods of investigation.
- Have average verbal abilities.
- Be able to relate to people and make quick decisions in stressful situations.
- Have good space and form perception, eye-hand coordination, and hand and finger dexterity.
- Be able to see and remember details about people and objects.

WORK SETTING

Environment
Work indoors and outdoors.
Hours
Work 40 hours a week; may work rotating shifts including evening, night, weekend, and holiday hours.
Employers
City, county, state and federal governments.

CONSIDERATIONS

- Job satisfaction may be gained from giving protective and social services to a community and from helping solve social problems.
- Police and detectives may feel isolated from the community.
- A few officers are killed or wounded on duty.
- Physical and psychological tests are usually required.

NEBRASKA EMPLOYMENT

About 1,770 police officers and detectives are projected to be employed by 1991.

WAGES

In Nebraska, salaries for police officers and detectives vary widely based on the size and location of the law enforcement agency as well as the assigned duties and level of responsibility associated with those duties. Salaries range between $16,848 and $27,040. Nationally, salaries compare favorably with those of Nebraska with a somewhat higher top range of $35,300 a year in larger jurisdictions of over one million people.

EMPLOYMENT GROWTH

Nebraska
- Favorable

National
- Somewhat Favorable

Factors
- Turnover rate is low and competition is usually keen.
- The outlook depends on public financial support.
- The best prospects will be for those with some college training.

PREPARATION

SKILLS

- Knowledge of law enforcement methods and procedures and of laws and ordinances.
- Skills in investigative procedures.
- Skills in using police equipment.
- Skills in giving oral and written reports and in listening.
- Skills in observing and remembering details.
- Skills in determining proper courses of action.

LICENSING OR CERTIFICATION

- Law enforcement officers must be licensed by the Nebraska Crime Commission.
- To be licensed an applicant must be admitted to the Training Center and complete the 11 1/2-week Basic Law Enforcement Training Program and receive grades of 70% or better on all written and practical exams.
- To be admitted to the Training Center, an applicant must be at least 21 years of age, have a high school diploma or equivalent, pass a criminal history check, and have a physical exam within one year of admission date.

TRAINING

- The minimum educational requirement is high school graduation, but some employers prefer to hire applicants with at least one year of college.
- Some cities hire officers through the civil service or merit system.
- Beginning officers are trained at the Nebraska Law Enforcement Training Center.
- Training for several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

567	Criminal Justice
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, government, sociology, psychology, health, physical education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 100 and 255-257.

Guide for Occupational Exploration (2nd ed., 1984), pp. 152-155.

Occupational Outlook Handbook (1990-91 ed.), p. 290.

Military Career Guide (1988-89 ed.), pp. 121, 124, and 317.

SCHOOLS

21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
99301	Nebraska Law Enforcement Training Center
22306	Northeast Community College
21821	University of Nebraska at Omaha
21622	Wayne State College

5133 CORRECTIONAL INSTITUTION OFFICERS

OCCUPATIONAL DESCRIPTION

Correctional institution officers are responsible for the safekeeping of people who have been arrested and sent to prison or jail. They enforce discipline, oversee the daily activities of inmates, give out work assignments, and help the inmates with specific tasks. Also, they inspect the facilities to ensure that conditions are sanitary and secure. They settle disputes among inmates, prevent escapes, and provide counseling. Others escort and guard prisoners outside an institution.

HOLLAND CODE

SER (Social, Enterprising, Realistic)

SPECIALTIES

Jailers (372.367-014)
Correction Officers (372.667-018)
Police Officers II (375.367-010)
Military Corrections Specialists (M51330)

NCIS RELATED OCCUPATIONS

20322	Probation Officers
5132	Police and Detectives
5134	Sheriffs, Bailiffs and Law Enforcement Officers
5144	Guards

WORK ACTIVITIES

- Supervise inmates during work, meals, recreation, and all other activities.
- Escort them during transfers inside and outside of the institution.
- See that inmates know, understand, and obey the rules of the institution.
- Write reports on any violations and take appropriate action.
- Count and search inmates and inspect living quarters.
- Secure towers, gates, and fences.
- Help search for and recapture escapees.
- Admit, instruct, and escort authorized visitors.
- Supervise visits to inmates.
- Help prepare offenders for return to society.

APTITUDES

- Be able to learn the procedures of guarding prisoners or inmates in jails or correctional institutions.
- Have average verbal abilities.
- Be able to relate to people and have qualities of tact and persuasion.
- Have average eye-hand coordination, space and form perception, and physical coordination.
- Be able to react quickly and calmly in emergency situations.
- Be able to make decisions based on experience, observation, and intuition.
- Be able to work well under stress.

WORK SETTING

Environment

Work indoors and outdoors.

Hours

Usually work 40 hours a week; may include evenings, nights, weekends, and holidays in rotating shifts.

Employers

City, county, state, and federal correctional institutions including jails, prisons, halfway houses, reformatories, and penitentiaries; and privately owned correctional institutions.

CONSIDERATIONS

- These workers may be exposed to danger, verbal abuse, and harassment.
- This job is very stressful.

NEBRASKA EMPLOYMENT

About 1,330 correctional institution officers are projected to be employed by 1991.

WAGES

Starting salaries for correctional institution officers vary according to the type, size and location of the correctional facility. In Nebraska, starting salaries range between $13,936 and $22,880 a year. Nationally, salaries range between $11,600 and $40,000 depending on experience and location. The average starting salary is $17,900 a year.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Favorable
Factors

- Turnover rate in this occupation is high.
- The federal government is increasing the number of correctional facilities in the next ten years.
- Many states are considering building new prisons because of overcrowding.

PREPARATION

SKILLS

- Knowledge of the judicial system, correction procedures, and security systems.
- Skills in recordkeeping and report writing.
- Skills in giving instructions.
- Skills in using reason rather than force.
- Skills in thinking and acting quickly in emergencies.
- Skills in supervision and working with all kinds of people.

TRAINING

- Most employers require high school graduation or equivalent for hiring.
- Some employers require some college training in criminal justice or work experience in law enforcement.
- Employers provide on-the-job training for officers.
- Training in some specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

567	Criminal Justice
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, government, sociology, psychology, health, and physical education.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 252 and 257.
Guide for Occupational Exploration (2nd ed., 1984), pp. 156-159.
Occupational Outlook Handbook (1990-91 ed.), p. 285.
Military Career Guide (1988-89 ed.), p. 120.

SCHOOLS

21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
99301	Nebraska Law Enforcement Training Center
22306	Northeast Community College
21821	University of Nebraska at Omaha
21622	Wayne State College

5134 SHERIFFS, BAILIFFS, AND LAW ENFORCEMENT OFFICERS

OCCUPATIONAL DESCRIPTION

Sheriffs, bailiffs, and law enforcement officers carry out laws, keep order in courts, serve summonses, and provide police and detective services in rural areas. Their duties may range from issuing parking tickets to directing the activities of an entire department.

HOLLAND CODE

ESR (Enterprising, Social, Realistic)

SPECIALTIES

Parking Enforcement Officers (375.587-010)
Court Deputies (377.137-018)
Deputy Sheriffs (377-263-010)
Deputy United States Marshalls (377.267-010)
Bailiffs (377.667-010)
Fish and Game Wardens (379.167-010)

NCIS RELATED OCCUPATIONS

18521	Foresters
2110	Lawyers
5132	Police and Detectives
5133	Correctional Institution Officers
5144	Guards

WORK ACTIVITIES

- Patrol assigned areas to enforce laws, investigate crimes, and arrest violators.
- Notice traffic violations and give tickets.
- Direct traffic at accidents, help victims, and investigate causes.
- Control disturbances.
- Investigate suspicious or illegal activities and arrest violators.
- Locate and arrest people.
- Travel with prisoners.
- Give subpoenas and summonses.
- May speak to civic groups to promote safety.
- Keep records and write reports.

APTITUDES

- Be able to learn the law and methods of enforcement.
- Have average verbal abilities.
- Be able perform in stressful situations and work with a variety of people.
- Have good space and form perception, eye-hand and physical coordination, and hand and finger dexterity.
- Be able to make decisions.
- Be able to see and remember details about people and objects.

WORK SETTING

Environment

Work indoors and outdoors.

Hours

Work 40 to 50 hours a week including rotating shifts and evening, night, weekend, and holiday hours.

Employers

City, county, state, and federal governments.

CONSIDERATIONS

- Work involves danger and risks.
- Job may provide satisfaction from providing services to a community.

NEBRASKA EMPLOYMENT

About 880 sheriffs, bailiffs, and law enforcement officers are projected to be employed by 1991.

WAGES

Salaries for sheriffs, bailiffs, and law enforcement officers will vary widely depending on the type of position held, the duties and responsibilities of that position as well as the size and location of the jurisdiction. In Nebraska, salaries will range between $15,600 and $27,456 a year. Nationally, salaries tend to parallel those of Nebraska.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable

National
Somewhat Favorable

Factors

- Competition is very strong in this area.
- Outlook is influenced by the amount of public financial support.

PREPARATION

SKILLS

- Knowledge of enforcement methods and equipment and the laws.
- Skills in communication.
- Skills in recordkeeping and report writing.
- Skills in investigation and gather information.
- Skills in analyzing situations to decide the proper course of action.
- Skills in observing and remembering details.

TRAINING

- The minimum educational requirement is high school graduation.
- Training may be provided through on-the-job training, or apprenticeship.

EDUCATIONAL PROGRAM

118	Forestry and Natural Resources
531	Life Sciences
567	Criminal Justice
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, government, sociology, psychology, health, physical education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 257, 259-260, and 263.
Guide for Occupational Exploration (2nd ed., 1984), pp. 152-159.

SCHOOLS

22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
11902	Colorado State University
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21509	Hastings College
11907	Iowa State University
11908	Kansas State University
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
22414	Nebraska College of Technical Agriculture
99301	Nebraska Law Enforcement Training Center
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
21717	Union College
11922	University of Missouri-Columbia
21821	University of Nebraska at Omaha
21819	University of Nebraska Medical Center
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22517	York College

5144 GUARDS

OCCUPATIONAL DESCRIPTION

Guards protect people and property. They may investigate fires, thefts, or other matters for individuals or businesses. Some drive armored cars to transport money or valuables. Others guard business property, while some investigate thefts or locate missing people.

HOLLAND CODE

ESC (Enterprising, Social, Conventional)

SPECIALTIES

Security Consultants	(189.167-054)
Armored-Car Guards	(372.567-010)
Airline Security Representatives	(372.667-010)
Bodyguards	(372.667-014)
Security Guards	(372.667-034)
Private Investigators	(376.267-018)
House Officers	(376.367-018)
Bouncers	(376.667-010)

NCIS RELATED OCCUPATIONS

5132	Police and Detectives
5133	Correctional Institution Officers
5134	Sheriffs, Bailiffs, and Law Enforcement Officers

WORK ACTIVITIES

- Ensure crowd control at special events.
- Protect individuals from bodily harm.
- Allow only authorized persons onto property.
- Keep records.
- Monitor security systems.
- Watch for unusual happenings or hazards.
- Inspect security of windows, doors, fences, etc.
- Protect items enroute to their destinations.
- Investigate crimes, individuals, or missing persons.

APTITUDES

- Be able to learn the procedures of providing security and protection and of private investigation.
- Have average verbal and numerical abilities
- Be able to do routine, repetitive tasks accurately.
- Have good space and form perception and general coordination.
- Be able to make decisions based on observation, data, and intuition.
- Be able to work with a variety of people in stressful situations.
- Have qualities of creativity, imagination, analytical thinking, and problem-solving.

WORK SETTING

Environment
    Work indoors and outdoors.
Hours
    Work 40 or more hours a week; may include evenings, nights, weekends, and holidays; part-time work is often available.
Employers
    Security companies, manufacturers, wholesalers and retailers, colleges and universities, warehouses, hospitals, airports, museums, banks, schools, government agencies, and self-employed.

CONSIDERATIONS

- Work involves possibility of danger or injury.
- Guards often work alone with very little supervision.

NEBRASKA EMPLOYMENT

About 3,540 guards are projected to be employed by 1991.

WAGES

Salaries for guards will vary depending on the type and size of the employer. In Nebraska, starting salaries for guards range between $9,360 and $18,928 a year. Nationally, salaries compare favorably with those of Nebraska.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Favorable
Factors
- Turnover is high in this occupation, but competition for the better paying jobs is keen.
- The outlook depends on the use of security services by public and private enterprises and agencies.

PREPARATION

SKILLS

- Knowledge of security systems and procedures and investigative practices.
- Knowledge of laws and regulations.
- Skills in recordkeeping and report writing.
- Skills in spotting and dealing with security problems.
- Skills in gathering information.
- Skills in working with a variety of people.

LICENSING OR CERTIFICATION

- Private investigators/security agents must be licensed through the Secretary of State's Office.
- To be licensed, an applicant must be a United States Citizen, at least 21 years of age, of good moral character, and pay an annual fee. No examination is required.

TRAINING

- Most employers prefer applicants who have a high school diploma or equivalent.
- Some companies require people who have previous training or work experience in law enforcement or security.
- Beginners usually receive on-the-job training.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

567	Criminal Justice
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, government, health, physical education, electonics, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 252 and 258.
Guide for Occupational Exploration (2nd ed., 1984), pp. 152-159.
Occupational Outlook Handbook (1990-91 ed.), p. 288.

SCHOOLS

21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
99301	Nebraska Law Enforcement Training Center
22306	Northeast Community College
21821	University of Nebraska at Omaha
21622	Wayne State College

5212 BARTENDERS

OCCUPATIONAL DESCRIPTION

Bartenders prepare and serve alcoholic and nonalcoholic drinks for customers in bars, lounges, restaurants, and clubs. They take drink orders from workers who serve customers and from patrons seated at the bar. They also serve snacks, collect payments, and keep bar areas clean. Those who own their own bar keep business records and hire, train, and direct staff. DOT 312.474-010

HOLLAND CODE

ERC (Enterprising, Realistic, Conventional)

SPECIALTIES

Bar Attendants (312.477-010)
Military Food Service Specialists (M52100)

NCIS RELATED OCCUPATIONS

1351 Food Service and Lodging Managers
5213 Waiters and Waitresses

WORK ACTIVITIES

- Mix drinks.
- Learn recipes for common drinks
- Serve straight liquors and wines.
- Take orders from waiters, waitresses, or customers.
- Collect payments and operate cash register.
- Serve food items or snacks.
- Order and maintain inventory.
- Clean up after customers.
- Wash glasses and arrange them into attractive displays.
- Hire and supervise staff.

APTITUDES

- Be able to learn the methods of mixing and serving drinks.
- Have good verbal and numerical abilities.
- Be able to relate to a variety of people.
- Have good space and form perception and hand and finger dexterity.
- Have desire to serve people.
- Be able to make judgments based on set standards.

WORK SETTING

Environment
    Work indoors in bars; bars are often noisy, smoke-filled, and poorly lit.
Hours
    Work 40 hours or more a week; schedule may include evenings, nights, and weekends; part-time work is frequently available.
Employers
    Restaurants, bars, hotels, private clubs, taverns, and self-employed.

CONSIDERATIONS

- Bartenders stand for long periods of time.
- Free meals during work hours and uniforms are often provided by the employer.
- Bartenders may have to deal with unruly customers and to stop disturbances.
- Some bartenders are union members.

NEBRASKA EMPLOYMENT

About 3,200 bartenders are projected to be employed by 1991.

WAGES

Most bartenders in Nebraska work part-time. The average hourly wage for all bartenders is $4.50 plus tips. A significant percentage of bartenders total income is generated from tips. Nationally, wages for bartenders range between $4.80 and $11.70 per hour including tips.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Favorable
Factors
- The high job turnover rate creates many openings.
- The increased enforcement of drunk driving laws has contributed to a slowdown in sales and decreased the demand for bartenders.
- Those willing to work the less desirable shifts increase their chances for a job.

135

PREPARATION

SKILLS

- Knowledge of a wide variety of cocktail recipes and methods of mixing drinks.
- Knowledge of state and local laws and liabilities of bartenders and establishments.
- Skills in making conversation.
- Skills in ordering and inventorying.
- Skills in dealing with a wide variety of people.
- Skills in making change and working the cash register.

TRAINING

- High school graduation is usually required.
- Bartenders usually must be at least 21 years old, but some employers prefer then to be at least 25 years old.
- Most bartenders learn their skills on the job or through private training programs.

EDUCATIONAL PROGRAM

225	Entertainment Services
399	Food Production, Management and Services

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, speech, phychology, office education, and business law.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 226.
Guide for Occupational Exploration (2nd ed., 1984), pp. 501-503.
Occupational Outlook Handbook (1990-91 ed.), p. 296.
Military Career Guide (1988-89 ed.), p. 123.

5213 WAITERS AND WAITRESSES

OCCUPATIONAL DESCRIPTION

Waiters and waitresses serve food and beverages to customers. Their duties may include greeting patrons, discussing menus, taking orders, serving food, making out checks, and collecting payment. In small firms, waitresses may help prepare food and clear and set tables and counters. DOT 350.677-030

HOLLAND CODE

ECS (Enterprising, Conventional, Social)

SPECIALTIES

Bar Waiters/Waitresses (311.477-018)
Formal Waiters/Waitresses (311.477-026)
Informal Waiters/Waitresses (311.477-030)
Buffet Waiters/Waitresses (311.674-018)
Club Waiters/Waitresses (352.677-018)
Military Food Service Specialists (M52100)

NCIS RELATED OCCUPATIONS

1351	Food Service and Lodging Managers
5212	Bartenders
5216	Counter Attendants
5257	Transportation Attendants

WORK ACTIVITIES

- Ensure that the table is set properly and neatly.
- Take beverage orders and present menu.
- Know restaurant's offerings thoroughly and be able to provide meal suggestions and information.
- Take orders and communicate them to kitchen for preparation.
- Fill customers' glasses and provide any special utensils.
- May be responsible for food preparation tasks.
- Serve food according to a serving pattern.
- May act as cashier, take phone reservations, and package carry-out.

APTITUDES

- Be able to learn the methods of serving customers, the menu and prices, methods of food preparation, and restaurant policies.
- Have average verbal and numerical abilities.
- Have good physical coordination and hand and finger dexterity.
- Be able to do routine, repetitive work accurately.
- Be able to work with people and have desire to serve them.

WORK SETTING

Environment
Work indoors.
Hours
Work 35 to 40 hours a week including evenings, weekends, holidays, and split shifts; some part-time work available.
Employers
Restaurants, bars, clubs, resorts, airports, hotels, coffee shops, lunchrooms, and amusement/recreation establishments.

CONSIDERATIONS

- One free meal a day is usually included in the job.
- Worker must spend much time standing and walking and may be exposed to extreme in hot and cold.
- Tips are usually a large part of the workers income.
- Some workers belong to a labor union.

NEBRASKA EMPLOYMENT

About 13,250 waiters and waitresses are projected to be employed by 1991.

WAGES

The average hourly wage for all waiters and waitresses in Nebraska is approximately $3.00 per hour plus tips. In most cases tips double and often triple the income of the worker. Wages and tips will vary according to the location as well as the type of clientele the establishment attracts. Nationally, wages range from $3.70 to $9.10 per hour including tips. In some major resort areas, waiters and waitresses are paid no hourly wage and work entirely for tips.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Favorable
Factors

- Employment growth is expected as people eat out more and new restaurants open.
- Job turnover is high because of low wages and hard work.
- Competition in restaurants where tips are high is keen.

PREPARATION

SKILLS

- Knowledge of how food is prepared, menu items, prices, and wines.
- Knowledge of simple arithmetic and serving procedures.
- Skills in taking orders and serving foods and beverages quickly and efficiently.
- Skills in working with pleasant and unpleasant customers.
- Skills in working under pressure.

TRAINING

- No special education is required for this occupation although some employers prefer high school graduates.
- Employers provide on-the-job training.
- Previous work experience is helpful.

EDUCATIONAL PROGRAM

399	Food Production, Management, and Services
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, business math, foods, consumer education, and office education.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 225, 239, and 240.
Guide for Occupational Exploration (2nd ed., 1984), pp. 501-503.
Occupational Outlook Handbook (1990-91 ed.), p. 296.
Military Career Guide (1988-89 ed.), p. 123.

SCHOOLS

22501	Central Community College-Hastings Campus
11904	Ferris State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
11915	Rocky Mountain School of Meatcutting
22711	Southeast Community College-Lincoln Campus
21821	University of Nebraska at Omaha
21622	Wayne State College

5214 COOKS

OCCUPATIONAL DESCRIPTION

Cooks prepare or supervise the prepar-ation of meals for institutions serving food. Their duties depend upon the size and kind of establishment. In small restaurants, one cook may prepare all the food with the aid of kitchen helpers. In large eating places, a kitchen staff often includes several cooks and many helpers. Each cook usually has a special job or duty. Head cooks or chefs direct the kitchen staff, plan menus, and buy food supplies. DOT 313.361-014

HOLLAND CODE

RSE (Realistic, Social, Enterprising)

SPECIALTIES

Specialty Cooks (313.361-026)
Bakers (313.381-010)
Pizza Bakers (313.381-014)
Pastry Cooks (313.381-026)
School Cafeteria Cooks (313.381-030)
Cooks (315.361-010)
Psychiatric Hospital Cooks (315.361-018)
Military Food Service Specialists (M52100)

NCIS RELATED OCCUPATIONS

1351	Food Service and Lodging Managers
13512	Food Service Managers
23901	County Home-Demonstration Agents
23902	Home Economists
3020	Dietitians
5215	Short-Order Cooks
5216	Counter Attendants
5219	Kitchen Helpers
6872	Bakers

WORK ACTIVITIES

- Estimate the quantity of food needed and order food.
- Plan menus and establish prices.
- Train staff and demonstrate cooking techniques.
- Supervise kitchen personnel.
- Set temperatures of cooking appliances.
- Measure and mix ingredients.
- Bake, roast, boil, and steam foods, add seasonings, and test for doneness.
- Place food on plates and add garnishes.
- May prepare foods for cooking.
- May bake pastry, bread, and cake.

APTITUDES

- Be able to learn methods of food preparation and cooking.
- Have good verbal and numerical abilities.
- Be able to work with people.
- Be able to perform a variety of tasks in a limited period of time.
- Have good space and from perception and hand and finger dexterity.
- Be able to make decision based on experience and observations.

WORK SETTING

Environment

Work indoors in kitchen areas; kitchens may be warm and humid.

Hours

Work 35 to 50 hours a week depending on the type of establishment; may include evenings, weekends, and holiday hours; those employed in schools may work only nine or ten months during the school year.

Employers

Restaurants, cafeterias, hotels, educational institutions, hospitals, nursing homes, industrial cafeterias, caterers, country clubs, correctional institutions, and other institutions.

CONSIDERATIONS

- Job offers a chance to be creative and see results of work done.
- Work may involve long hours working under pressure.
- Cooks may have to do much standing, reaching, and heavy lifting.

NEBRASKA EMPLOYMENT

About 13,250 cooks are projected to be employed by 1991.

WAGES

Starting wages for cooks will vary according to the type of food service establishment as well as the amount of training and experience of the employee. In Nebraska, starting wages for cooks range between $4.73 per hour to $7.86 per hour. For cooks employed full time this means a yearly income of $9,776 to $16,300 a year. Nationally, wages range from $5.00 per hour to $6.75 per hour. For cooks employed full time this means a yearly income of between $10,400 to approximately $14,040 a year.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Favorable
Factors

- This occupation is expected to grow as the population grows and people dine out more.
- The greatest growth will be in hospitals, nursing homes, and other residential care facilities.

PREPARATION

SKILLS

- Knowledge of foods, cooking techniques and equipment, kitchen management, cost control, dietetics, and sanitation.
- Knowledge of safety and food handling regulations.
- Skills in preparation and cooking of foods.
- Skills in bookkeeping and purchasing.
- Skills in working with others.

TRAINING

- Most employers prefer to hire high school graduates.
- Some employers look for applicants who have completed a vocational program in commercial food preparation.
- Many cooks start as helpers in a kitchen and learn cooking skills on the job from experienced workers.
- Some apprenticeship programs are offered by trade unions, professional associations, or hotels.

EDUCATIONAL PROGRAM

399	Food Production, Management, and Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, home economics education, consumer education, and foods.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 227-228.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 294.
Military Career Guide (1988-89 ed.), p. 123.

SCHOOLS

22501	Central Community College-Hastings Campus
11904	Ferris State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
11915	Rocky Mountain School of Meatcutting
22711	Southeast Community College-Lincoln Campus
21821	University of Nebraska at Omaha
21622	Wayne State College

5215 SHORT-ORDER COOKS

OCCUPATIONAL DESCRIPTION

Short-order cooks work at lunch counters, snack bars, diners, and fast food restaurants. They prepare foods that take a short time to assemble and cook. Also they may take food orders from customers and serve the food to them. In some jobs they perform other tasks such as taking payments for foods.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Short-Order Cooks I (313.361-022)
Short-Order Cooks II (313.671-010)
Military Food Service Specialists (M52100)

NCIS RELATED OCCUPATIONS

1351	Food Service and Lodging Managers
13512	Food Service Managers
5214	Cooks
5216	Counter Attendants
5219	Kitchen Helpers

WORK ACTIVITIES

- Prepare and cook foods.
- Carve meats and prepare sandwiches, salads, soups, and beverages.
- Cook food ahead of time and keep it warm.
- May wait on customers.
- Keep work areas clean.
- Plan menus and order supplies.

APTITUDES

- Be able to learn cooking techniques.
- Have good verbal and numerical abilities.
- Be able to visualize forms, notice details, and work with hands.
- Have ability to perform a variety of tasks in a limited period of time.
- Be able to make decisions based on experience and observations.
- Be able to work under pressure.

WORK SETTING

Environment
  Work indoors in kitchen areas; kitchens may be hot and humid.
Hours
  Work 35 to 50 hours a week including evening, weekends, and holiday hours; part-time work is often available.
Employers
  Fast food restaurants, lunch counters, and small restaurants.

CONSIDERATIONS

- Work requires standing for long periods of time, reaching, and heavy lifting.
- Short-order cooks may be exposed to fumes and hazards such as burns and cuts.

NEBRASKA EMPLOYMENT

About 930 short-order cooks are projected to be employed by 1991.

WAGES

Wages for short-order cooks range between $4.25 per hour to $6.93 per hour. For short-order cooks employed at least 40 hours a week this means a yearly income of $8,750 to $14,560 a year in Nebraska. Nationally, salaries range from $4.50 to $5.50 per hour forshort order cooks employed full time this means a yearly income between $9,360 and $11,440.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Favorable
Factors
- The turnover rate in this occupation is relatively high.
- The growth in this occupation is caused by an increase in the population and an increase in the number of people eating away from home.

PREPARATION

SKILLS

- Knowledge of foods, cooking techniques and equipment, and restaurant operations.
- Knowledge of safety and food handling regulations.
- Skills in preparation, storage, and cooking of foods.
- Skills in working with others.

TRAINING

- Most employers prefer to hire high school graduates.
- Some employers prefer applicants who have completed a training program in commercial food preparation.
- Many workers begin as helpers in a kitchen and learn cooking skills on the job from experienced workers.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

399	Food Production, Management, and Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, home economics education, consumer education, and foods.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 227-228.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 294.
Military Career Guide (1988-89 ed.), p. 123.

SCHOOLS

22501	Central Community College-Hastings Campus
11904	Ferris State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
11915	Rocky Mountain School of Meatcutting
22711	Southeast Community College-Lincoln Campus
21821	University of Nebraska at Omaha
21622	Wayne State College

5216 COUNTER ATTENDANTS

OCCUPATIONAL DESCRIPTION

Counter attendants serve food in places that offer fast service or special food delivery. Some work in carryouts, soda fountains, or cafeterias while others serve food to hotel guests or hospital patients in their rooms or to drive-up customers in their cars. They take food orders, serve food and drinks, and take payments. Also, they may cook and prepare special dishes and fill serving lines and fill plates with food.

HOLLAND CODE

ECR (Enterprising, Conventional, Realistic)

SPECIALTIES

Fast-Food Workers (311.472-010)
Car Hops (311.477-010)
Lunchroom or Coffee Shop Counter Attendants (311.477-014)
Take Out Waiters/Waitresses (311.477-038)
Canteen Operators (311.674-010)
Cafeteria Counter Attendants (311.677.014)
Fountain Servers (319.474-010)
Hospital Food-Service Workers (355.677-010)
Military Food Service Specialists (M52100)

NCIS RELATED OCCUPATIONS

1351	Food Service and Lodging Managers
13512	Food Service Managers
5213	Waiters and Waitresses
5214	Cooks
5215	Short-Order Cooks
5219	Kitchen Helpers

WORK ACTIVITIES

- Take food orders.
- Call food orders into the kitchen, pick up, and serve orders to customers.
- Prepare fountain drinks, sandwiches, and salads.
- Present checks to customers and take payment.
- Deliver food to hotel guests in their rooms.
- Prepare food trays and deliver them to hospital patients.
- Serve food from counters and steam tables.
- Clean work area, collect dirty dishes, wash dishes, and collect garbage.

APTITUDES

- Be able to learn the procedures of fast-food service and preparation.
- Have average verbal and numerical abilities.
- Be able to perform the same task continuously.
- Have average space and form perception and hand and finger dexterity.
- Be able to follow directions carefully and work within set procedures.

WORK SETTING

Environment
    Work indoors
Hours
    Work 40 hours a week; part-time work is available; work includes evenings, weekends, holidays, and split shifts.
Employers
    Hospitals, nursing homes, other health care facilities, hotels, fast-food restaurants, coffee shops, lunch counters, cafeterias, soda fountains, ice cream stores, and snack bars.

CONSIDERATIONS

- Job requires a great deal of standing and walking and lifting of loads of 25 pounds or more.
- Work area may be hot and noisy, and worker may be exposed to hazards.

NEBRASKA EMPLOYMENT

About 4,540 counter attendants are projected to be employed by 1991.

WAGES

Counter attendants average between $4.09 per hour to $6.45 per hour. For those employed at least 40 hours a week this means a yearly income average for Nebraska of $8,528 to $13,400 a year. Nationally, wages for counter attendants range from $3.20 to $6.10 per hour and $6.656 a year to $12,688 plus tips. While some counter attendants receive tips, most fast food workers do not. Most employers offer discounts on meals and services to employees as additional compensation. Some fast-food franchises now offer scholarship programs to employees who plan to continue their education while employed.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Favorable
Factors

- Growth in employment may come from increased number of people eating away from home.
- This occupation has a high turnover rate.
- There are many applicants because of the minimal hiring requirements.

PREPARATION

SKILLS

- Knowledge of procedures in taking orders and serving food and beverages quickly and efficiently.
- Knowledge of safety regulations and sanitation.
- Skills in making out checks, making change, and operating cash registers.
- Skills in working with people.

TRAINING

- No special education is needed for this job.
- On-the-job training is provided by employers.
- Some employers prefer applicants who can serve alcoholic beverages.
- Training in several speciality occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

399	Food Production, Management, and Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, foods, and office education.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 225-226 and 242.
Guide for Occupational Exploration (2nd ed., 1984), pp. 501-507.
Occupational Outlook Handbook (1990-91 ed.), p. 296.
Military Career Guide (1988-89 ed.), p. 123.

SCHOOLS

22501	Central Community College-Hastings Campus
11904	Ferris State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
11915	Rocky Mountain School of Meatcutting
22711	Southeast Community College-Lincoln Campus
21821	University of Nebraska at Omaha
21622	Wayne State College

5219 KITCHEN HELPERS

OCCUPATIONAL DESCRIPTION

Kitchen helpers do routine tasks to help with food preparation and service. They may move supplies from storage areas, help prepare breads and pasteries, wash and peel fruits and vegetables, and wash dishes and pans. They help keep kitchen areas clean and orderly and set up tables. Some prepare food trays or stock food dispensing machines. DOT 318.687-010

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Baker Helpers (313.684-010)
Pastry Cook Helpers (313.687-010)
Deli Cutter-Slicers (316.684-014)
Meat Cutters (316.684-018)
Salad Makers (317.384-010)
Sandwich Makers (317.684-018)
Cook Helpers (317.687-010)
Food Order Expediters (319.467-010)
Kitchen Food Assemblers (319.484-010)
Caterer Helpers (319.677-010)
Military Food Service Specialists (M52100)

NCIS RELATED OCCUPATIONS

1351	Food Service and Lodging Managers
13512	Food Service Managers
5214	Cooks
5215	Short-Order Cooks
5216	Counter Attendants

WORK ACTIVITIES

- Carry and hand out supplies.
- Wash and cut fruits and vegetables.
- Prepare doughs, meats, batters, etc.
- Clean utensils, equipment, and work areas.
- Remove garbage and sweep and mop floors.
- Wash pots and pans.
- Operate dishwashing machines.
- Polish silver.
- Set up banquet tables.
- Call out food orders in fast-food restaurants.
- Prepare meal trays.

APTITUDES

- Be able to learn the procedures and methods of food preparation and of a kitchen.
- Have physical and eye-hand coordination.
- Be able to work with others and follow directions.
- Be able to do the same tasks continuously.

WORK SETTING

Environment
Work indoors in kitchen areas; kitchens may be hot, humid, and noisy.

Hours
Work 40 hours a week including evening, weekend, and holiday hours; part-time work is available.

Employers
Restaurants, educational institutions, hotels, bars, clubs, nursing homes, personal care facilities, cafeterias, and fast-food restaurants.

CONSIDERATIONS

- Opportunities for advancement to cook are fairly good.
- Helpers are constantly walking and standing.
- Work may involve hazards such as sharp kitchen tools and slippery floors.
- Work load is uneven and may include pressure during meal hours.
- Some workers belong to unions.

NEBRASKA EMPLOYMENT

About 8,250 kitchen helpers are projected to be employed by 1991.

WAGES

Wages for kitchen helpers will vary according to the size of the restaurant, institution or facility. In Nebraska, kitchen helpers may expect a salary range between $8,528 and $13,520 a year. Nebraska salaries tend to parallel those at the National level.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable

National

Favorable Factors

- High job turnover generates many openings.
- More opportunities are expected as restaurant business increases.

PREPARATION

SKILLS

- Knowledge of kitchen routines and procedures.
- Skills in operating equipment.
- Knowledge of kitchen safety and sanitation regulations.
- Skills in reading and following instructions and recipes.
- Skills in working quickly and efficiently.

TRAINING

- Informal training is given on-the-job by a supervisor or experienced worker.

EDUCATIONAL PROGRAM

399	Food Production, Management, and Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math and foods.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 228, 230, and 231.
Guide for Occupational Exploration (2nd ed., 1984), pp. 233-239 and 262-275.
Occupational Outlook Handbook (1990-91 ed.), p. 294.
Military Career Guide (1988-89 ed.), p. 123.

SCHOOLS

22501	Central Community College-Hastings Campus
11904	Ferris State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
11915	Rocky Mountain School of Meatcutting
22711	Southeast Community College-Lincoln Campus
21821	University of Nebraska at Omaha
21622	Wayne State College

5232 DENTAL ASSISTANTS

OCCUPATIONAL DESCRIPTION

Dental assistants work with dentists to examine and treat patients. They make patients comfortable, prepare them for treatment, and obtain dental records. During treatment, they hand the dentist instruments and materials, keep patients' mouths clear, prepare materials, and process x-rays. Also they instruct patients in oral health and prepare instruments for sterilization. Some perform clerical duties. DOT 079.371-010

HOLLAND CODE

SAI (Social, Artistic, Investigative)

NCIS RELATED OCCUPATIONS

2620	Dentists
3630	Dental Hygienists

WORK ACTIVITIES

- Prepare patients for examination or treatment.
- Place instruments and adjust apparatus.
- Hand instruments to dentists.
- Position suction and retraction devices.
- Prepare materials.
- Develop x-rays.
- May perform more complex technical duties.
- Instruct patients in proper dental care.
- May make arrangements for payment or additional appointments.
- Prepare treatment room for next patient.
- Sterilize all instruments.
- May perform clerical duties.

APTITUDES

- Be able to learn basic practices and procedures of dentistry.
- Have average verbal and numerical abilities.
- Be able to follow instructions carefully and work according to set standards.
- Have average eye-hand coordination and use of hands and fingers.
- Be able to work with people who may be under stress and work as a member of a team.

WORK SETTING

Environment
  Work indoors in offices or examination rooms.
Hours
  Usually work 40 hours a week with possible evening and weekend hours; part-time work is available.
Employers
  Dentists, hospital dental departments, public health agencies, private clinics, and dental schools.

CONSIDERATIONS

- Job may be rewarding because of helping others.
- Uniforms and dental care may be provided.
- Workers may be exposed to communicable diseases.
- Handling x-ray equipment poses dangers, but safety precautions are taken.

NEBRASKA EMPLOYMENT

About 1,130 dental assistants are projected to be employed by 1991.

WAGES

In Nebraska, salaries for dental assistants will vary according to the size and location of the practice as well as the amount of education or training of the employee. Starting salaries will range between $11,450 and $18,096 a year. Nationally, the salary range for dental assistants is somewhat broader at $9,360 to $21,164 a year. The lower salaries will usually reflect wages paid to an individual either in training or working less than full time.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Favorable
Factors
- Dental assistants have a high turnover rate.
- There is an increased demand for these workers because of increased use of dental

insurance, more interest in dental care, and recent dental graduates have been taught to use assistants.

PREPARATION

SKILLS

- Knowledge of the practices, procedures, and terminology of dentistry.
  Skills in laboratory.
- Skills in dealing with people under stress and working as part of a team.
- Skills in handling dental tools and equipment.
- Skills in recordkeeping.

LICENSING OR CERTIFICATION

- Although it is not required, a person may be certified by graduating from an accredited program in dental assisting and passing an exam given by the Dental Assisting National Board.

TRAINING

- Most employers require applicants to have completed a one-year diploma or certificate program or a two-year associate degree program.
- Some assistants are trained on the job.
- Another method of training is through apprenticeship.

EDUCATIONAL PROGRAM

358	Dental Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, composition, business math, biology, chemistry, physics, health, accounting, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 65.
Guide for Occupational Exploration (2nd ed., 1984), pp. 519-522.
Occupational Outlook Handbook (1990-91 ed.), p. 299.

SCHOOLS

22501	Central Community College-Hastings Campus
21102	Chadron State College
21606	Dana College
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
49823	Omaha College of Health Careers
21715	Peru State College
22711	Southeast Community College-Lincoln Campus
21717	Union College
21821	University of Nebraska at Omaha
21819	University of Nebraska Medical Center
21718	University of Nebraska-Lincoln

5233 HEALTH AIDES

OCCUPATIONAL DESCRIPTION

Health aides work under the direction of doctors or other health specialists. Their duties range from cleaning work areas and equipment to treating patients and per-forming clerical tasks. They may mix drug preparations, assist in examining patients, run errands, or drive an ambulance.

HOLLAND CODE

SRC (Social, Realistic, Conventional)

SPECIALTIES

Pharmacy Helpers (074.387-010) (52334)
Physical Therapist Assistants (076.224-010) (52331)
Occupational Therapy Assistants (076.364-010) (52332)
Chiropractor Assistants (079.364-010)
Phlebotomists (079.364-022)
Medical Assistants (079.367-010) (52333)
Podiatric Assistants (079.374-018)
Physical Therapy Aides (355.354-010)
Ambulance Attendants (355.374-010)
Medication Aides (355.374-014)
Mental-Retardation Aides (355.377-018)
Morgue Attendants (355.667-010)
Respiratory-Therapy Aides (355.674-022)
Occupational Therapy Aides (355.377-010)
Ambulance Drivers (913.683-010)

NCIS RELATED OCCUPATIONS

20324	Case Aides
26101	Pathologists
2830	Podiatrists
2890	Chiropractors
36906	Emergency Medical Technicians

WORK ACTIVITIES

- Prepare and comfort patients.
- Make appointments and keep records.
- Set up and sterilize equipment.
- Help patients do exercises.
- Mix and label medicines.
- Take inventory and order supplies.
- Perform routine lab tests.
- Gather information concerning patient's condition.
- Fill out medical records and insurance forms.
- Prepare examining and lab rooms and equipment.
- Drive an ambulance.

APTITUDES

- Be able to learn the techniques needed to assist health specialists.
- Have average verbal and numerical abilities.
- Be able to relate to a variety of people.
- Have good physical coordination.
- Be able to follow directions accurately and work within set standards.
- Be able to keep accurate records.

WORK SETTING

Environment
Work indoors.
Hours
Usually work 40 hours a week including evening and weekend hours; part-time work may be available.
Employers
Hospitals, clinics, nursing homes, physicians, chiropractors, podiatrists, ambulance companies, morgues, government agencies, nursing homes, rehabilitation centers, and schools.

CONSIDERATIONS

- Work may offer rewards from helping others.
- Job may involve lifting and standing for long periods.

NEBRASKA EMPLOYMENT

About 2,300 health aides are projected to be employed by 1991.

WAGES

Salaries for health aides will vary according to the type and size of care facility as well as the education or training completed by the aide. In Nebraska, salaries range between $12,480 and $16,848 a year. Nationally, the salary range is somewhat broader at $7,000 to $19,000 a year. Health aides employed less than full time may expect hourly wages in the range from $4.28 per hour to $8.09 per hour.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Favorable
Factors

- Growing public interest in health care and helping the disabled may increase the need for these workers.

PREPARATION

SKILLS

- Knowledge of the equipment, terminology, and procedures of the specific field working in.
- Skills in recordkeeping and word processing.
- Skills in following instructions quickly and accurately.
- Skills in working with people who may be ill, in pain, or under stress.

TRAINING

- Training varies with the occupation from on-the-job training to two-year training programs.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

366	Allied Medical Services
367	Rehabilitation Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, biology, health, health occupations, office education, data processing, and business math.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 56, 60, 64, 65, 241, and 886.
Guide for Occupational Exploration (2nd ed., 1984), pp. 233-239 and 513-522.
Occupational Outlook Handbook (1990-91 ed.), p. 300.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
11902	Colorado State University
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
11903	Emporia State University
11941	Hutchinson Community College
21311	Kearney State College
11945	Lakewood Community College
22402	McCook Community College
49822	Methodist College of Nursing and Allied Health
22304	Mid-Plains Community College
21612	Midland Lutheran College
22414	Nebraska College of Technical Agriculture
21714	Nebraska Wesleyan University
22306	Northeast Community College
49823	Omaha College of Health Careers
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
21717	Union College
11920	University of Iowa
11937	University of Missouri-Kansas City
21821	University of Nebraska at Omaha
21819	University of Nebraska Medical Center
22205	Western Nebraska Community College-Scottsbluff Campus

52331 PHYSICAL THERAPIST ASSISTANTS

OCCUPATIONAL DESCRIPTION

Physical therapist assistants work under the supervision and direction of physical therapists. They perform many tasks to assist therapists in giving treatments to persons with physical disabilities. DOT 076.224-010

HOLLAND CODE

SCR (Social, Conventional, Realistic)

SPECIALTIES

Military Physical Therapist Specialists (M52331)

NCIS RELATED OCCUPATIONS

3033	Physical Therapists

WORK ACTIVITIES

- Teach and encourage patients in learning and improving physical activity.
- Give therapy, exercises, traction, and massages to patients.
- Watch patients during treatment and collect and study data on patients' response to treatment.
- Fit, adjust, and train patients in the use of artificial limbs and devices such as canes, crutches, and wheel chairs.
- Answer the telephone, fill out forms, and order supplies.

APTITUDES

- Be able to learn the techniques needed to assist a physical therapist.
- Have good verbal and numerical abilities.
- Be able to influence others.
- Have good space and form perception and physical coordination and hand and finger dexterity.
- Be able to make decisions based on observations and data.
- Be able to relate to a variety of people and work as part of a team.

WORK SETTING

Environment
  Work indoors in physical therapy areas.
Hours
  Work 40 hours a week.
Employers
  Hospitals, clinics, nursing homes, rehabilitation centers, public health agencies, schools, and private practices.

CONSIDERATIONS

- Work may be both rewarding and frustrating.
- Assistants help lift patients and move heavy equipment.

NEBRASKA EMPLOYMENT

About 320 physical therapist assistants are projected to be employed by 1991.

WAGES

Salaries for physical therapist assistants will vary according to the size and geographic location of the care facility. The amount of training completed as well as the level of responsibility will also be factors in determining the starting salary. In Nebraska, physical therapist assistants may expect a salary range between $13,728 and $21,008 a year. Nationally, salaries tend to be somewhat lower with a range between $11,000 and $17,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Favorable
Factors
- More people are recognizing the importance of therapy and rehabilitation for the disabled which will increase the need for these workers.

PREPARATION

SKILLS

- Knowledge of methods and equipment of physical therapy.
- Knowledge of anatomy and physiology.
- Skills in recordkeeping.
- Skills in working with people.

TRAINING

- Most employers prefer to hire people with a two-year degree from a community college or technical school.
- Some assistants may get training from a prephysical therapy program or on-the-job training.

EDUCATIONAL PROGRAM

365	Nursing-Related Services
367	Rehabilitation Services
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, biology, anatomy, health, data processing, and health occuaptions.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 60.
Guide for Occupational Exploration (2nd ed., 1984), pp. 513-518.
Military Career Guide (1988-89 ed.), p. 73.

SCHOOLS

22315	Central Community College-Kearney Center
22307	Central Community College-Platte Campus
21102	Chadron State College
11902	Colorado State University
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
11903	Emporia State University
11941	Hutchinson Community College
21311	Kearney State College
22402	McCook Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
21717	Union College
11920	University of Iowa
11937	University of Missouri-Kansas City
21821	University of Nebraska at Omaha
21819	University of Nebraska Medical Center
22205	Western Nebraska Community College-Scottsbluff Campus

52332 OCCUPATIONAL THERAPY ASSISTANTS

OCCUPATIONAL DESCRIPTION

Occupational therapy assistants help occupational therapists provide therapy programs for physically or emotionally handicapped clients.
DOT 076.364-010

HOLLAND CODE

SCE (Social, Conventional, Enterprising)

SPECIALTIES

Military Occupational Therapy Specialists (M52332)

NCIS RELATED OCCUPATIONS

24013 Vocational-Rehabilitation Counselors
3032 Occupational Therapists

WORK ACTIVITIES

- Help evaluate a client's daily living skills.
- Teach clients self-care, work, and creative skills.
- Help teach families home care programs.
- Assist in carrying out the general activity program set up by the occupational therapist.
- Design and adapt equipment used in therapy.
- Keep records, order supplies, and maintain equipment.

APTITUDES

- Be able to learn the basic procedures and principles in occupational therapy.
- Have good verbal and numerical abilities.
- Be able to work with a variety of people.
- Have good space and form perception and hand and finger coordination.
- Be able to do a variety of tasks and work within set standards.
- Be able to make decisions based on facts.

WORK SETTING

Environment
Work indoors in activity rooms or at clients' homes.
Hours
Work 40 hours a week.
Employers
Hospitals, clinics, nursing homes, rehabilitation centers, public health agencies, and schools.

CONSIDERATIONS

- Work may offer rewards by helping others.
- Worker must be patient and be able to handle frustrations.
- Some lifting of patients and moving of equipment may be necessary.

NEBRASKA EMPLOYMENT

About 70 occupational therapy assistants are projected to be employed by 1991.

WAGES

Salaries for occupational therapy assistants will vary according to the size and geographic location of the care facility as well as the amount of education or training completed by the individual. In Nebraska, entry level salaries for occupational therapy assistants, range between $13,600 and $18,928 a year. Nationally, salaries tend to parallel those of Nebraska.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Favorable
Factors
- Growing public interest in helping the disabled will increase the need for these workers.

PREPARATION

SKILLS

- Knowledge of the procedures of occupational therapy and the equipment and materials used.
- Knowledge of anatomy and physiology.
- Skills in arts and crafts.
- Skills in working with a variety of people.
- Skills in recordkeeping.

LICENSING OR CERTIFICATION

- For professional development, a person may become a certified occupational therapy assistant (COTA).
- To be certified, a person must complete an accredited program and pass an exam given by the American Occupational Therapy Association.

TRAINING

- Employers prefer applicants with a two-year associate degree in occupational therapy.
- Some employers hire workers who were trained in a one-year vocational or technical school program.
- Becoming certified may help in getting a job.

EDUCATIONAL PROGRAM

365	Nursing-Related Services
367	Rehabilitation Services

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, biology, anatomy, health, physical education, arts and crafts, music, health occupations, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 60.
Guide for Occupational Exploration (2nd ed., 1984), pp. 513-518.
Military Career Guide (1988-89 ed.), p. 67.

SCHOOLS

22315	Central Community College-Kearney Center
22307	Central Community College-Platte Campus
21102	Chadron State College
11902	Colorado State University
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
11903	Emporia State University
11941	Hutchinson Community College
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
21717	Union College
11920	University of Iowa
11937	University of Missouri-Kansas City
21821	University of Nebraska at Omaha
21819	University of Nebraska Medical Center
22205	Western Nebraska Community College-Scottsbluff Campus

52333 MEDICAL ASSISTANTS

OCCUPATIONAL DESCRIPTION

Medical assistants help provide routine treatment and perform laboratory and clerical tasks under the direction of physicians. They are assigned respon-sibilities that enable the physicians to devote maximum time to diagnosing and treating patients. DOT 079.367-010

HOLLAND CODE

SCR (Social, Conventional, Realistic)

NCIS RELATED OCCUPATIONS

2901	Registered Nurses
29011	Nurse Practioners
3040	Physician Assistants
3660	Licensed Practical Nurses

WORK ACTIVITIES

- Prepare treatment room for examination of patient.
- Set up equipment and sterilize equipment.
- Assist physician during examination or treatment.
- Interview and comfort patients.
- Check and record pulse, blood pressure, temperature, height and weight.
- May operate equipment, give injections, or help in the laboratory.
- May schedule appointments, keep medical records, type reports, and fill out insurance forms.
- May order and maintain supplies.

APTITUDES

- Be able to learn basic medical terminology and simple medical procedures.
- Have good verbal and numerical abilities.
- Be able to follow instructions carefully and do routine tasks.
- Have average physical coordination and hand and finger dexterity.
- Be able to work with people who are ill or in pain and remain calm in emergencies.
- Be able to check written materials accurately.

WORK SETTING

Environment
    Work indoors in offices, treatment and examination rooms, and laboratories.
Hours
    Usually work 40 hours a week with possible evening and weekend hours; part-time work is available.
Employers
    Physicians, hospitals, and clinics.

CONSIDERATIONS

- Job may be satisfying for a person who enjoys helping people.
- Work involves light lifting.

NEBRASKA EMPLOYMENT

About 720 medical assistants are projected to be employed by 1991.

WAGES

Salaries for medical assistants will vary according to the size and geographic location of the care facility as well as the training and experience of the assistant. In Nebraska, salaries range between $9,500 and $15,200 a year. Nationally, the average starting salary for graduates of accredited medical assistant programs was $13,000 a year.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Favorable
Factors
- Demand for these workers will increase as the number of practicing physicians and outpatient care facilities grows and medical paperwork becomes more complex.
- Medical assistants with a background in both nursing and administrative duties will find the best employment opportunities.

PREPARATION

SKILLS

- Knowledge of medical terms and examining room, laboratory, and office procedures.
- Skills in communication and listening.
- Skills in recordkeeping and word processing.

LICENSING OR CERTIFICATION

- For professional recognition, a person may become a registered or certified medical assistant.
- To be registered or certified, a person must pass an exam.

TRAINING

- Employers prefer to hire applicants trained in specialized one- or two-year programs offered by hospitals, medical schools, vocational schools, or community colleges.
- Some medical assistants are trained on the job.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

365	Nursing-Related Services
366	Allied Medical Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, biology, chemistry, health, health occupations, office education, and data processing.

BIBIOLOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 65.
Guide for Occupational Exploration (2nd ed., 1984), pp. 519-522.
Occupational Outlook Handbook (1990-91 ed.), p. 300.

SCHOOLS

22315	Central Community College-Kearney Center
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21507	Doane College
21311	Kearney State College
11945	Lakewood Community College
22402	McCook Community College
49822	Methodist College of Nursing and Allied Health
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
22414	Nebraska College of Technical Agriculture
21714	Nebraska Wesleyan University
22306	Northeast Community College
49823	Omaha College of Health Careers
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
21821	University of Nebraska at Omaha
21819	University of Nebraska Medical Center
22205	Western Nebraska Community College-Scottsbluff Campus

52334 PHARMACY HELPERS

OCCUPATIONAL DESCRIPTION

Pharmacy helpers mix pharmaceutical preparations under the direction of pharmacists. DOT 074.387-010

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

NCIS RELATED OCCUPATIONS

3010 Pharmacists

WORK ACTIVITIES

- Prepare inventory, order supplies, and place supplies in stock.
- Label drugs, chemicals, and other preparations as directed by pharmacists.
- Deliver drug orders and run errands.
- Clean equipment and work areas.
- Wash and sterilize glassware.
- Figure charges for drugs.
- Perform other duties under the supervision of pharmacists.

APTITUDES

- Have ability to learn the methods of assisting pharmacists.
- Be able to keep accurate records.
- Have average verbal and math abilities.
- Be able to visualize form relationships and discriminate colors.
- Have good hand and finger dexterity.
- Be able to follow instructions carefully and work according to set standards.

WORK SETTING

Environment
    Work indoors in pharmacies.
Hours
    Work 40 hours a week; may include evenings and weekends.
Employers
    Retail pharmacies, large retail stores, hospitals, research labs, medicine manufacturers, government agencies, local health agencies, clinics, and colleges and universities.

CONSIDERATIONS

- Job may require standing for long periods of time and lifting loads weighing from 25 to 50 pounds.

NEBRASKA EMPLOYMENT

About 320 pharmacy helpers are projected to be employed by 1991.

WAGES

Salaries for pharmacy helpers will vary according to the size and geographic location of the pharmacy. In Nebraska salaries span a broad range between $9,984 and $18,096 a year. The lower salary figure will represent individuals either in training or working less than full time. Nationally, salaries tend to parallel those of Nebraska with a slightly lower bottom range.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Favorable
Factors
- More pharmacists are hiring helpers to save time and money.

PREPARATION

SKILLS

- Knowledge of methods and procedures used by pharmacists.
- Knowledge of methods for sanitation and sterilization.
- Skills in recordkeeping and data processing.
- Skills in working quickly but accurately.

TRAINING

- Most pharmacy helpers learn their job duties on the job under the supervision of experienced workers.
- Some employers look for those who have taken courses in the general clerical area.
- Training may be obtaining through apprenticeship training.

EDUCATIONAL PROGRAM

631 Apprenticeship Training
632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, health, office education, and data processing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 56.
Guide for Occupational Exploration (2nd ed., 1984), pp. 233-239.

5236 NURSING AIDES, ORDERLIES, AND ATTENDANTS

OCCUPATIONAL DESCRIPTION

Nursing aides, orderlies, and attendants perform a variety of duties to care for sick and injured people under the direction of nurses. They answer patients' bell calls, deliver messages, serve meals, and make beds. They also feed, bathe, and dress patients; take temperatures; and help patients get around. Some store or move supplies and clean patients' rooms. Those who work in patients' homes may also clean laundry, plan meals, shop for food, and prepare meals.

HOLLAND CODE

SER (Social, Enterprising, Realistic)

SPECIALTIES

Home Attendants (354.377-014)
Psychiatric Aides (355.377-014)
Nurse Aides (355.674-014)
Orderlies (355.674-018)
Geriatric Nurse Assistants (355.674-026)

NCIS RELATED OCCUPATIONS

20324	Case Aides
2901	Registered Nurses
29011	Nurse Practitioners
29012	Nurse Anesthetists
3660	Licensed Practical Nurses
3690	Health Technologists and Technicians
36907	Surgical Technicians

WORK ACTIVITIES

- Make beds, bring food trays, fill water pitchers.
- Help patients with personal care.
- Assist patients in walking and getting in and out of bed.
- Give back rubs.
- Direct visitors to rooms and deliver messages.
- Move patients or equipment from one area to another.
- Encourage and help patients to join in activities.
- Give patients companionship and understanding.
- Report progress of patients to supervisors.
- Assist with cleaning tasks related to safety and comfort of patients in their home.
- Plan and prepare meals.

APTITUDES

- Be able to learn the methods and procedures of patient care.
- Have average verbal and numerical abilities.
- Be able to move often from one task to another and to use several different skills.
- Have good space and form perception and hand and finger dexterity.
- Be able to work with people who are ill.
- Be able to respond quickly in emergencies and keep accurate records.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week; schedule may include evening, weekend, or night hours; part-time work available.
Employers
Nursing homes, hospitals, mental health institutions, other health care facilities, clinics, and public health agencies.

CONSIDERATIONS

- Job may be good work experience for a premedical nursing student.
- Workers may be exposed to hazardous conditions, stressful patient situations, and contagious diseases.
- Work may involve lifting of patients or moving heavy equipment.

NEBRASKA EMPLOYMENT

About 11,820 nursing aides, orderlies, and attendants are projected to be employed by 1991.

WAGES

Salaries for nursing aides, orderlies, and attendants vary widely according to the size and location of the health care facility as well as the assigned duties and level of responsibility to carry out those duties. In Nebraska, salaries span a wide range between $8,950 and $14,980.

Nationally, salaries tend to be somewhat higher than those of Nebraska with a range of $8,900 to $15,500 a year.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable
National
Favorable
Factors
- The greatest opportunities will be available in nursing homes and other long-term care facilities.
- This occupation has a high turnover rate.

PREPARATION

SKILLS

- Knowledge of procedures of patient care.
- Knowledge of basic medical terms and treatments.
- Skills in recordkeeping.
- Skills in dealing with people who are ill.
- Skills in following directions accurately.

TRAINING

- Most employers prefer to hire high school graduates.
- On-the-job training is given through both classroom teaching and supervised work and may last several days or weeks.
- The Nebraska Health Care Association offers a course for nursing assistants and a few schools offer short training programs.
- First-aid or home nursing classes and hospital volunteer work are helpful.

EDUCATIONAL PROGRAM

353	Nursing
365	Nursing-Related Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects include courses in composition, speech, biology, chemistry, psychology, health, and health occupations.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 241-242.

Guide for Occupational Exploration (2nd ed., 1984), pp. 519-522.

Occupational Outlook Handbook (1990-91 ed.), p. 302.

SCHOOLS

21801	Bellevue College
49803	Bishop Clarkson College
49704	Bryan Memorial Hospital School of Anesthesia
49717	Bryan Memorial Hospital School of Nursing
22315	Central Community College-Kearney Center
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21808	Grace College of the Bible
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
49822	Methodist College of Nursing and Allied Health
22304	Mid-Plains Community College
21612	Midland Lutheran College
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
21717	Union College
21821	University of Nebraska at Omaha
21819	University of Nebraska Medical Center
21718	University of Nebraska-Lincoln
22205	Western Nebraska Community College-Scottsbluff Campus
22517	York College

5242 HOUSEKEEPING CLEANERS

OCCUPATIONAL DESCRIPTION

Housekeeping cleaners are employed by hotels, motels, hospitals, dormitories, office buildings, and other such places to clean rooms. They may provide other services to guests or residents. Also, they may clean swimming pools, driveways, and garage areas. DOT 323.687-014

HOLLAND CODE

CRE (Conventional, Realistic, Enterprising)

SPECIALTIES

Hospital Cleaners (323.687-010)
Housecleaners (323.687-018)

NCIS RELATED OCCUPATIONS

1351	Food Service and Lodging Managers
13511	Hotel or Motel Managers
5020	Day Workers
5244	Janitors and Cleaners

WORK ACTIVITIES

- Remove sheets, towels, and other linens from the room.
- Add new supplies such as towels, soap, water glasses, and other items to the room.
- Make beds with fresh linens.
- Empty wastebaskets.
- Do other cleaning duties such as vacuuming, dusting, or mopping.
- Sort, count, fold, mark, or carry linens.
- Disinfect and sterilize equipment and supplies.
- May launder soiled linens.

APTITUDES

- Be able to learn cleaning procedures.
- Have average verbal abilities.
- Be able to pay attention to details, handle a variety of duties, and do routine tasks.
- Have good hand coordination and space and form perception.
- Be able to follow instructions.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours a week; may include weekends and holidays; part-time work is available.
Employers
  Motels, hotels, resort, hospitals, nursing homes, restaurants, beauty salons, and college residence halls.

CONSIDERATIONS

- Work is routine, but worker may set own pace.
- Job requires much walking, climbing, stooping, reaching, and lifting.

NEBRASKA EMPLOYMENT

About 4,860 housekeeping cleaners are projected to be employed by 1991.

WAGES

Salaries for housekeeping cleaners vary according to the size and location of the employer as well as the level of responsibility assigned to the position. In Nebraska, salaries range between $8,736 to $14,976 a year. Individuals who work less than full time may expect an hourly wage between $4.18 per hour and $7.22 per hour. Nationally, the average yearly salary for full-time housekeeping cleaners is $12,500 a year.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Favorable
Factors
- As the hospitality industry grows, there may be an increase in job opportunities.
- There is a high turnover rate in this occupation.

161

PREPARATION

SKILLS

- Knowledge of proper cleaning procedures.
- Skills in using cleaning equipment and supplies.
- Skills in completing tasks quickly and thoroughly.

TRAINING

- No special education is required although some employers prefer to hire high school graduates.
- Beginners usually learn duties on the job under supervision of an experienced worker or in training sessions that explain employee policies, equipment operation, and the employer's regulations.
- Training in a specialty occupation may be obtained though apprenticeship training.

EDUCATIONAL PROGRAM

398	Custodial and Housekeeping Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in industrial arts and home economics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 232.
Guide for Occupational Exploration (2nd ed., 1984), pp. 262-275.
Occupational Outlook Handbook (1990-91 ed.), p. 315.

SCHOOLS

22501	Central Community College-Hastings Campus
22304	Mid-Plains Community College

5244 JANITORS AND CLEANERS

OCCUPATIONAL DESCRIPTION

Janitors and cleaners keep buildings clean and in good condition. Duties include fixing faucets, emptying trash, servicing restrooms, mowing lawns, and doing minor painting and carpentry jobs. They use many different tools and cleaning materials. Some may wash walls and windows, move furniture, shovel snow, and remove heavy trash. DOT 382.664-010

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Commercial or Institutional Cleaners (381.687-014)
Industrial Cleaners (381.687-018)
Sextons (389.667-010)
Window Cleaners (389.687-014)
Chimney Sweeps (891.687-010)
Project-Crew Workers (891.687-018)

NCIS RELATED OCCUPATIONS

5020	Day Workers
5242	Housekeeping Cleaners
6179	Building Maintenance Repairers.

WORK ACTIVITIES

- Sweep, mop, vacuum, and wax stairs and floors.
- Tend furnaces and boilers.
- Empty trash and garbage containers.
- Do minor repairs and routine painting, plumbing, and electrical wiring.
- Clean restrooms.
- Tell management about the need for major repairs.
- Clean snow from sidewalk, mow lawns, trim shrubs, and care for flowers.
- Wash windows, glass partitions, mirrors, and other glass surfaces.
- Clean chimneys and fire places.
- Inventory and order supplies.

APTITUDES

- Be able to learn the methods of cleaning and maintenance.
- Be able to follow spoken and written instructions.
- Have good space and form perception, hand and finger dexterity, and physical coordination.
- Be able to move quickly from one task to another using different skills.
- Be able to work within set standards.

WORK SETTING

Environment
Work indoors in building and outdoors on building premises.

Hours
Work 40 hours a week; may include evenings and weekends; part-time work may be available.

Employers
Educational institutions, factories, hospitals, churches, restaurants, government agencies, retail stores, institutions, commercial establishments, apartment buildings, banks, and firms providing janitorial services on a contract basis.

CONSIDERATIONS

- Job involves walking, stooping, reaching, medium lifting, and working outdoors in all kinds of weather.

NEBRASKA EMPLOYMENT

About 14,170 janitors and cleaners are projected to be employed by 1991.

WAGES

Salaries for janitors and cleaners will vary primarily based on the nature of employment, geographic location and the number of hours worked. Janitors employed full time in Nebraska may expect a salary range between $10,400 and $17,264 a year. For those individuals employed on a part-time basis, hourly wages of between $4.79 per hour and $8.25 per hour may be expected in Nebraska. The higher wages are reported from the major metropolitan areas in the state. Nationally, salaries tend to parallel

Nebraska salaries. Higher salaries may be expected in larger cities where union affiliation is much stronger than in rural areas.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Favorable
Factors

- Increased demand is expected to create some moderate employment growth.
- Most openings will result from the high turnover rate.

PREPARATION

SKILLS

- Knowledge of cleaning and maintenance procedures, supplies, and equipment.
- Mechanical skills.
- Skills in planning work.
- Skills in following instructions.

TRAINING

- Some employers prefer to hire workers with high school diplomas.
- Supervised training is usually given on the job.
- Training in several specialty occupations may be obtained through apprenticeship.

EDUCATIONAL PROGRAM

398	Custodial and Housekeeping Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in construction, industrial arts, home economics, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 264-266 and 873.
Guide for Occupational Exploration (2nd ed., 1984), pp. 262-275.
Occupational Outlook Handbook (1990-91 ed.), p. 315.

SCHOOLS

22501	Central Community College-Hastings Campus
22304	Mid-Plains Community College

5246 PEST CONTROL SERVICES

OCCUPATIONAL DESCRIPTION

Pest control services protect people and property from rats, mice, termites, and household insects. They inspect and treat restaurants, hotels, food stores, homes, and other places to locate and destroy pests. They use chemicals, poisonous gases, and mechanical traps to kill pests that infest buildings and surrounding areas.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Mosquito Sprayers (379.687-014)
Fumigators (383.361-010)
Termite Exterminators (383.364-010)
Exterminator Helpers (383.684-010)
Termite Exterminator Helpers (383.687-010)
Exterminators (389.684-010)

WORK ACTIVITIES

- Inspect buildings to determine extent of infestation.
- Spray poison gases, chemical solutions, or dust powders in rooms or work areas.
- Place poisonous paste or bait and mechanical traps.
- Suggest ways to change conditions that attract pests.
- May clean out areas where pests hide or replace infested areas that are damaged.
- Keep records and bill customers.

APTITUDES

- Be able to learn about pests and pesticides.
- Have good verbal abilities.
- Be able to make decisions based on data and observations.
- Have physical coordination and hand and finger dexterity.

WORK SETTING

Environment
Work indoors and outdoors.

Hours
Usually work 40 hours a week; overtime possible in spring and summer seasons.

Employers
Pest control companies, government agencies, and self-employed.

CONSIDERATIONS

- Often work in unpleasant surroundings such as attics, crawlways, and wet fields.
- May be exposed to toxic conditions caused by working with pesticides.

NEBRASKA EMPLOYMENT

About 220 pest control servicers are projected to be employed by 1991.

WAGES

Salaries for pest control workers will vary widely in that many work on a commission basis. In Nebraska, wages span a broad range between $12,500 and $20,000 a year. Nationally, salaries tend to be somewhat lower with a range between $8,000 and $12,000 a year. In some major metropolitan areas salaries will be much higher for pest control services working on a contractural basis for large firms or government agencies.

EMPLOYMENT GROWTH

Nebraska
Unfavorable

National
Favorable

Factors
- Some increase in employment may result from the growing number of buildings, the enforcement of government regulations, and the growing awareness of damage caused by pests.

PREPARATION

SKILLS

- Knowledge of insects and rodents and their habits.
- Knowledge of pesticides and how to use them.
- Knowledge of the laws governing the use of pesticides.

- Skills in working with the equipment.
- Skills in recordkeeping and sales.

LICENSING OR CERTIFICATION

- Exterminators must be certified by the Environmental Protection Agency.
- To be certified, an applicant must attend a one-day training session and pass a written examination.
- There are several different categories for pesticide applicators. Each category may have its own requirements.

TRAINING

- High school graduation is required by most employers.
- Training is usually given on the job and lasts two or three months.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in biology, chemistry, geometry, health, business math, and construction.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 264-266.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.

5252 BARBERS

OCCUPATIONAL DESCRIPTION

Barbers cut, trim, and style hair. Their duties may include coloring and straightening hair and fitting hairpieces. Many offer other services such as hair and scalp treatments, face massages, shaves and shampoos. Those who own or manage a shop also order supplies, pay bills, keep records, and hire workers. DOT 330.371-010

HOLLAND CODE

ESR (Enterprising, Social, Realistic)

SPECIALTIES

Military Barbers (M52520)

NCIS RELATED OCCUPATIONS

5253 Hairdressers and Cosmetologists

WORK ACTIVITIES

- Talk to customers regarding the length and style desired.
- Cut, trim, thin, and shape hair using scissors, brushes, razors, clippers, blow driers, and vacuum brushes.
- Shave area around ears and back of neck.
- Fit hairpieces.
- Give permanent waves and color hair.
- May recommend and sell hair and personal grooming aids and products.
- Collect payments.
- Keep work stations clean and sterilize equipment.

APTITUDES

- Be able to learn barbering techniques.
- Have good verbal abilities.
- Be able to picture abstract things.
- Have good space and form perception, eye-hand coordination, and finger dexterity.
- Be able to detect slight differences in color and form.
- Be able to work with a variety of people.

WORK SETTING

Environment
  Work indoors.

Hours
  Work 40 or more hours a week including evenings and weekends; part-time work may be available.

Employers
  Barber and beauty shops, large hotels, airports, department stores, government agencies, and self-employed.

CONSIDERATIONS

- Work involves many hours spent with the public, talking, and standing with arms slightly raised.

NEBRASKA EMPLOYMENT

About 1,450 barbers are projected to be employed by 1991.

WAGES

Salaries for certified barbers will vary widely depending on the size and location of the shop as well as the professional reputation of the barber. Many barbers work on a commission basis in addition to a base wage. In Nebraska, salaries range between $8,000 a year for individuals just starting or working less than full time to $15,000 a year. In addition to the salary and commission many barbers include tips in their income. Nationally, earnings from wages, commission,s and tips range from $15,600 to $26,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Favorable

National
  Somewhat Favorable

Factors
- Population growth and current interest in hair grooming and styling may result in some openings.
- Opportunities will be best for barbers who can style hair as well as give haircuts.

PREPARATION

SKILLS

- Knowledge of barbering techniques and services.

- Knowledge of current styles and the care and use of equipment.
- Skills in understanding and following oral instructions.
- Skills in picturing the final results before the service has begun.

LICENSING OR CERTIFICATION

- Barbers must be certified by the Nebraska Board of Barber Examiners.
- To be certified, an applicant must be at least 17 years of age, be a high school graduate, have completed 2,100 hours at an accredited barber school, and pass an exam.

TRAINING

- The minimum educational requirement is graduation from an approved barber school. Programs usually last twelve months.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

228	Personal Services
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, biology, chemistry, business math, health, accounting, and marketing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 233.

Guide for Occupational Exploration (2nd ed., 1984), pp. 496-497.

Occupational Outlook Handbook (1990-91 ed.), p. 306.

Military Career Guide (1988-89 ed.), p. 119

SCHOOLS

31603	Bahner College of Hairstyling-Fremont
31326	Bahner College of Hairstyling-Grand Island
31815	Bahner College of Hairstyling-Omaha
31827	Capitol School of Hairstyling
31701	College of Hair Design-Lincoln
31306	Columbus Beauty College
31809	David's Head College of Hair Design
31224	Hollywood Beauty College
31712	Joseph's College of Beauty
31414	McCook Beauty Academy
31821	Rudy Consentino School of Hairstyling
31822	Stewart School of Hairstyling
22214	Western Nebraska Community College-Sidney Campus
31828	Xenon International School of Hair Design

5253 HAIRDRESSERS AND COSMETOLOGISTS

OCCUPATIONAL DESCRIPTION

Hairdressers and cosmetologists help people look attractive. They shampoo, cut, and style hair and give advice on hair care. Their duties may also include giving manicures and facials, advising on the use of makeup, and cleaning and styling wigs and hairpieces. Those who run their own businesses hire and supervise workers, keep business records, and order supplies. DOT 332.271-010

HOLLAND CODE

ESR (Enterprising, Social, Realistic)

SPECIALTIES

Manicurists	(331.674-010)
Fingernail Formers	(331.674-014)
Hair Stylists	(332.271-018)
Wig Dressers	(332.361-010)
Make-Up Artists	(333.071-010)
Mortuary Beauticians	(339.361-010)
Electrologists	(339.371-010)

NCIS RELATED OCCUPATIONS

5252 Barbers

WORK ACTIVITIES

- Discuss with customers preferences on hair styles, length, and treatment.
- Offer advice on care and grooming of hair.
- Shampoo, cut, curl, straighten, style, bleach, or tint hair using hair dryers, blow dryers, scissors, razors, rollers, styling combs, and heat lamps.
- Provide skin care and apply or suggest cosmetics.
- May remove facial or body hair.
- May manicure nails.
- May clean, set, repair, fit and dye wigs.
- May sell beauty products.

APTITUDES

- Be able to learn the variety of subjects necessary for hairdressing and cosmetology.
- Have good verbal abilities and be able to work well with people.
- Be able to detect slight differences in color or form.
- Have good space and form perception, eye-hand coordination, and finger dexterity.
- Be able to visualize abstract things.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 or more hours a week including evenings and weekends; part-time work may be available.
Employers
    Beauty and barber shops, hotels, department stores, hospitals, nursing homes, and television and motion picture studios.

CONSIDERATIONS

- Workers are able to be creative and original.
- Job may involve working with difficult clients.
- Long hours are spent standing with arms slightly raised.

NEBRASKA EMPLOYMENT

About 4,880 cosmetologists and hairdressers are projected to be employed by 1991.

WAGES

Salaries for hairdressers and cosmetologists will vary because many receive income from commissions or wages, and from tips. Individuals who do not own their own salon usually receive a percentage of the money they take in. The average percentage is usually about 50 percent. Some receive a percentage in addition to a set wage. In Nebraska, salaries range between $12,000 and $15,000 a year. The higher salaries will go to individuals with an established clientele. Nationally, salaries vary widely depending on location and experience but generally fall in a range from $9,100 to $16,640 a year.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Favorable

Factors

- Opportunities may increase as more people develop an interest in hair care and styling and makeup.
- Openings and income may decline during economic downturns.
- Turnovers in this occupation are high.

PREPARATION

SKILLS

- Knowledge of techniques used in hairstyling, cosmetology, and manicuring.
- Knowledge of latest products, techniques, and styles in hairdressing.
- Knowledge of care and use of equipment.
- Skills in understanding and following oral instructions.
- Skills in picturing the final results before the service begins.

LICENSING OR CERTIFICATION

- Cosmetologists must be licensed by the Nebraska Board of Examiners in Cosmetology.
- To be licensed, an applicant must be 17 years of age, have a high school diploma, complete first aid and CPR training, graduate from a school of cosmetology (2,000 hours) and pass an exam.
- Sixteen hours of continued education are required biennially.

TRAINING

- The minimum educational requirement is graduation from a cosmetology school or completion of an apprenticeship program.

EDUCATIONAL PROGRAM

228	Personal Services
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, business math, biology, chemistry, health, marketing, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 233-234.
Guide for Occupational Exploration (2nd ed., 1984), pp. 496-497.
Occupational Outlook Handbook (1990-91ed.), p. 308.

SCHOOLS

31603	Bahner College of Hairstyling-Fremont
31326	Bahner College of Hairstyling-Grand Island
31815	Bahner College of Hairstyling-Omaha
31827	Capitol School of Hairstyling
31705	College of Hair Design-Lincoln
31306	Columbus Beauty College
31809	David's Head College of Hair Design
31224	Hollywood Beauty College
31712	Joseph's College of Beauty
31821	Rudy Consentino School of Hairstyling
31822	Stewart School of Hairstyling
22214	Western Nebraska Community College-Sidney Campus
31828	Xenon International School of Hair Design

5257 TRANSPORTATION ATTENDANTS

OCCUPATIONAL DESCRIPTION

Transportation attendants provide services to plane, ship, bus, or train passengers to help keep them comfortable, happy, and safe.

HOLLAND CODE

ESC (Enterprising, Social, Conventional)

SPECIALTIES

Airplane-Flight Attendants (352.367-010)
Ground Hosts/Hostesses (352.377-010)
Bus Attendants (352.577-010)
Airline Lounge Receptionists (352.677-014)
Passenger Service Representatives (359.677-022)
Military Transportation Specialists (M46440)

NCIS RELATED OCCUPATIONS

5213	Waiters and Waitresses

WORK ACTIVITIES

- Greet passengers, check tickets, record destinations, and assign seats.
- Explain use of safety equipment.
- Serve meals and drinks to passengers.
- Provide passengers with items to make them comfortable.
- Answer questions about stops and schedules.
- Point out places of interest.
- Prepare reports of place of departure, ticket numbers, and meal and beverage inventory.

APTITUDES

- Be able to learn duties and regulations of transportation attendants.
- Have average verbal and numerical abilities.
- Be able to handle stressful situations and emergencies.
- Have average physical coordination.
- Be able to adjust frequently to a variety of activities.

WORK SETTING

Environment
Work indoors.

Hours
Hours vary with the type of transportation; schedules include holidays, weekends, evenings, and nights.

Employers
Airlines, passenger shipping lines, rail lines, rail companies, and group tours.

CONSIDERATIONS

- Travel discounts are usually given to workers and their families.
- Much time is spent away from home.
- Work involves noise and hazards.
- Most flight attendants are union members.

NEBRASKA EMPLOYMENT

There is no information available about transportation attendants' employment for 1991.

WAGES

In Nebraska, entry level salaries for transportation attendants range between $12,500 and $13,500 a year depending on the nature of employment. Most transportation attendants in Nebraska are flight attendants. Nationally, entry level salaries for flight attendants averaged $12,600 a year. Additional compensation is common for overtime, night and international flights.

EMPLOYMENT GROWTH

Nebraska
not available
National
Somewhat Favorable
Factors
- Travel increases will result in more openings, but competition will be keen because there are more applications than openings.

PREPARATION

SKILLS

- Knowledge of regulations, company operations and policies, emergency procedures and equipment, and first aid.

171

- Skills in dealing tactfully and serving all kinds of people.
- Skills in reacting calmly in emergency situations.
- Skills in recordkeeping.

TRAINING

- Most employers prefer to hire people with some college training or experience in dealing with the public.
- Companies offer training programs that may last up to five weeks.

EDUCATIONAL PROGRAM

272	Air Transportation
445	Foreign Languages

HELPFUL HIGH SCHOOL SUBJECTS

Follow a college preparatory curriculum including courses in composition, speech, foreign language, psychology, health, and home economics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 238-240 and 243.
Guide for Occupational Exploration (2nd ed., 1984), pp. 492-495.
Occupational Outlook Handbook (1990-91 ed.), p. 308.
Military Career Guide (1988-89, ed.) p. 117.

SCHOOLS

21102	Chadron State College
21810	Embry-Riddle Aeronautical University
21808	Grace College of the Bible
21311	Kearney State College
99734	LinAire, Inc.
22304	Mid-Plains Community College
99833	Sky Harbor Air Service, Inc.

5264 CHILD CARE PROVIDERS

OCCUPATIONAL DESCRIPTION

Child care providers supervise and care for children in boarding schools, orphanages, nurseries, hospitals, and playrooms. Some help handicapped children in a school or institution. Others work in sorority or fraternity houses where they assign rooms, supervise work and study programs, and chaperone trips and social functions.

HOLLAND CODE

ESR (Enterprising, Social, Realistic)

SPECIALTIES

Residence Supervisors (187.167-186)
School Child-Care Attendants (355.674-010)
Children's Institution Attendants (359.677-010)
Nursery School Attendants (359.677-018)
Playroom Attendants (359.677-026)

NCIS RELATED OCCUPATIONS

2310	Prekindergarten and Kindergarten Teachers
2320	Elementary School Teachers
23901	County Home-Demonstration Agents
4795	Teacher Aides
5060	Child Care Workers

WORK ACTIVITIES

- Bathe, dress and feed babies and change their diapers.
- Take children for walks.
- Supervise and plan indoor and outdoor activities.
- Bathe, dress, and feed sick, injured, or handicapped children.
- Help children get in and out of bed and aid them in getting around.
- Take children on field trips.
- Provide clean, safe environment and nutritional meals.
- May purchase supplies, mail bills, recruit children, and keep records.

APTITUDES

- Be able to learn the principles and procedures of caring for children.
- Have average verbal and numerical abilities.
- Be able to handle a variety of activities.
- Have average physical coordination.
- Be able to relate to children and other workers.
- Have qualities of sensitivity, empathy, patience, and creativity.

WORK SETTING

Environment
  Work indoors and outdoors.
Hours
  Work 40 hours a week; schedules may be rotating, and include evenings, nights, weekends, and holidays; part-time work often available.
Employers
  Children's homes, halfway houses, residential drug treatment centers, institutions for mentally or physically handicapped, community based group homes, detention homes, preschools, nursery schools, day care centers, churches, and hotels.

CONSIDERATIONS

- Job may be personally rewarding.
- Work requires medium lifting, stooping, reaching, and walking.
- Child care providers are responsible for the safety and well-being of children placed in their care.

NEBRASKA EMPLOYMENT

About 3,170 child care workers are projected to be employed by 1991.

WAGES

Salaries for child care providers will vary depending on the type, size and location of the treatment facility, school or care center. In Nebraska, entry level salaries for child care providers who are employed full time range between $8,000 and $16,000 a year. For individuals employed on a part-time basis hourly wages between $4.00 and $5.00 per hour are most common. Nationally, salaries are comparable to Nebraska wages.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors
- The outlook depends on public and private funding, laws that support child care systems, the number of families with both parents working, and the birth rate.
- There is a high turnover rate in this large occupation.

PREPARATION

SKILLS

- Knowledge of child or adolescent development.
- Skills in planning, organizing, and supervising.
- Skills in games and childhood activities.
- Skills in recordkeeping.
- Knowledge of child care activities.

TRAINING

- Training requirements vary with the type of employer and licenses involved.
- For most jobs, the minimum educational requirement is high school graduation.
- Some employers provide on-the-job training for new workers.
- Programs covering child care are available at community colleges and colleges and universities.
- Training in a specialty occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

234	Teacher Education, General Programs
391	Home Economics
397	Child Care and Guidance Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, speech, health, arts and crafts, music, home economics education, child care, psychology, and sociology.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 131, 241, and 243.
Guide for Occupational Exploration (2nd ed., 1984), pp. 519-522.
Occupational Outlook Handbook (1990-91 ed.), p. 307.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21808	Grace College of the Bible
21509	Hastings College
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
99332	Nannies of Nebraska
21325	Nebraska Christian College
21714	Nebraska Wesleyan University
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
21717	Union College
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22517	York College

5512 GENERAL FARMERS

OCCUPATIONAL DESCRIPTION

General farmers operate farms that produce more than one crop. For example, they may manage a farm that produces fruits, vegetables, grains, and/or livestock. They may own the farm or manage it for a cooperative, corporation, or some other owner. DOT 421.161-010

HOLLAND CODE

RSI (Realistic, Social, Investigative)

SPECIALTIES

Diversified Crops Farmers (407.161-010)

NCIS RELATED OCCUPATIONS

1443	Farm Products Purchasing Agents
1852	Forestry and Soil Conservation Scientists
18522	Soil Conservationists
1853	Agricultural and Food Scientists
18531	Agronomists
18532	Soil Scientists
1854	Biological Scientists
18543	Botanists
23903	County-Agricultural Agents
3820	Biological Technologists and Technicians
5514	Livestock Farmers
5515	Horticultural Farmers
5612	Farm Workers
5617	Livestock Workers

WORK ACTIVITIES

- Decide kinds and amounts of crops to be grown and livestock to be raised.
- Choose and buy seed, fertilizer, machinery, livestock, and feed.
- Plant, cultivate, and harvest crops.
- Prepare ground for planting.
- Repair equipment and prepare storage areas.
- Work with raising livestock.
- Arrange for sale of crops and livestock.
- Keep financial and production records.

APTITUDES

- Be able to learn farming methods.
- Have average verbal and numerical abilities.
- Be able to handle a variety of responsibilities, plan and organize, and supervise others.
- Have good space and form perception, physical coordination, and use of hands and fingers.
- Be able to picture objects from drawings and blue prints and see slight differences in objects.
- Be able to make decisions based on data, observation, and experience.

WORK SETTING

Environment
Work indoors and outdoors; may have to work outdoors in all kinds of weather.

Hours
Work hours vary depending on the seasons of the year; during busy seasons may work 60 to 80 hours.

Employers
Government agencies, private corporations, colleges and universities, and self-employed.

CONSIDERATIONS

- Farming allows a person to work independently.
- Work involves heavy lifting, stooping, reaching, climbing, and walking long distances.
- It may be difficult to become financially stable as a farmer.
- Farmers may be exposed to grain dust, chemical fumes, and hazards of using farm machinery.

NEBRASKA EMPLOYMENT

About 1,670 farmers are projected to be employed by 1991.

WAGES

Yearly earnings for individuals who farm full time vary widely depending on the type of operation, yield and of course weather. In Nebraska, yearly earnings for general farmers range between $15,000 and $20,000 a year. Nationally, the yearly earning range is quite broad at $10,000 to $50,000 a year. Due to the nature of this occupation, earnings may vary greatly from year to year.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Unfavorable
Factors

- Opportunities will be available for people who are able to buy land, equipment, and supplies or who join a family-owned business.
- The number of farms and farmers is expected to continue to decline, and the trend toward fewer and larger farms is expected to continue.

PREPARATION

SKILLS

- Knowledge of agricultural practices, equipment operation, breeding, pest control, and state and federal regulations that apply to farming.
- Knowledge of credit sources.
- Skills in carpentry and mechanics.
- Skills in business management and accounting.
- Skills in organizing and planning.

TRAINING

- There are no specific educational requirements, but most are high school graduates.
- A farm background, high school agriculture courses, and experience in Future Farmers of America or 4-H are helpful preparation.
- Two- and four-year programs in agriculture are available at community colleges, technical schools, colleges, and universities.
- Seminars are also offered by local agricultural extension agents and universities to keep farmers up-to-date on new developments.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

111	Agricultural Production
112	Animal Science
113	Soil Sciences
116	Agricultural Business and Management
125	Agricultural Mechanic
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, biology, construction.agribusiness, accounting, small engines, and vocational agriculture.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 272 and 280.
Guide for Occupational Exploration (2nd ed., 1984), pp. 134-137.
Occupational Outlook Handbook (1990-91 ed.), p. 318.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
11944	Central Missouri State University
21102	Chadron State College
21311	Kearney State College
22402	McCook Community College
22304	Mid-Plains Community College
22414	Nebraska College of Technical Agriculture
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22517	York College

5514 LIVESTOCK FARMERS

OCCUPATIONAL DESCRIPTION

Livestock farmers breed and raise animals and arrange to sell them or their products to buyers. They may raise cats, dogs, horses, cattle, wild birds, fish or other animals. DOT 410.161-018

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Animal Breeders	(410.161-010)
Fur Farmers	(410.161-014)
Hog-Confinement-System Managers	(410.161-022)
Poultry Farmers	(411.161-018)
Beekeepers	(413.161-010)
Fish Farmers	(446.161-010)

NCIS RELATED OCCUPATIONS

1443	Farm Products Purchasing Agents
1853	Agricultural and Food Scientists
23903	County-Agricultural Agents
2701	Veterinarians
3820	Biological Technologists and Technicians
5512	General Farmers
5612	Farm Workers
5617	Livestock Workers
5624	Animal Caretakers

WORK ACTIVITIES

- Select and breed animals.
- Choose and mix feed and feed supplements.
- Watch animals for signs of sickness and injury.
- Treat animals or arrange for their treatment by a veterinarian.
- Supervise animals during the birth of offspring.
- Clean and sanitize living areas.
- Arrange for sale of animals and products.

APTITUDES

- Be able to learn the practices of livestock production.
- Have average verbal and numerical abilities.
- Be able to handle a variety of activities.
- Have good space and form perception, physical coordination, and use of hands.
- Be able to plan, organize, and supervise others.
- Be able to make decisions based on data, observations, and experience.

WORK SETTING

Environment
Work indoors and outdoors; may have to work outdoors in all kinds of weather.
Hours
Work a varied number of hours; usually work weekends and holidays.
Employers
Government agencies, colleges and universities, private corporations, and self-employed.

CONSIDERATIONS

- Work may be satisfying because it is done independently.
- Job includes walking, stooping, reaching, and lifting heavy loads.
- Livestock farmers may be exposed to hazards from farm equipment and farm chemicals.

NEBRASKA EMPLOYMENT

About 1,670 farmers are projected to be employed by 1991.

WAGES

In Nebraska, yearly earnings for livestock farmers will vary depending on market trends reflecting consumer demands. Earnings will range between $15,000 to $20,000 a year. Nationally, the yearly earnings range is much broader at $10,000 to $50,000 a year.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Unfavorabl
Factors
- A decline in the consumption of beef and increased production costs have decreased the opportunities in this occupation.

PREPARATION

SKILLS

- Knowledge of livestock production and marketing.
- Knowledge of state and federal regulations related to livestock production.
- Skills in business management and record-keeping.
- Skills in mechanics and construction repair.
- Knowledge of credit sources.

TRAINING

- There are no specific educational requirements for livestock farmers, but most are high school graduates.
- A farm background, high school agriculture courses, and experience in Future Farmers of America or 4-H are helpful preparation.
- Two- and four-year programs in livestock production are available at community colleges, technical schools, and colleges and universities.
- Seminars and training sessions are offered to keep livestock farmers up-to-date on new developments.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

111	Agricultural Production
112	Animal Sciences
116	Agricultural Business and Management
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, biology, construction, vocational agriculture, agribusiness, accounting, and small engines.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 276-277, 279, and 281.

Guide for Occupational Exploration (2nd ed., 1984), pp. 134-137.

Occupational Outlook Handbook (1990-91 ed.), p. 318.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21311	Kearney State College
22402	McCook Community College
22304	Mid-Plains Community College
22414	Nebraska College of Technical Agriculture
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus
22517	York College

5515 HORTICULTURAL FARMERS

OCCUPATIONAL DESCRIPTION

Horticultural farmers grow and sell nursery products such as trees, shrubs, and flowering plants. They use many different types of farm tools, equipment, and machines to plant, tend, and harvest these crops.

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Field Horticulture-Specialty Growers (405.161-014)
Inside Horticulture-Specialty Growers (405.161-018)
Landscape Gardeners (408.161-010)

NCIS RELATED OCCUPATIONS

1443	Farm Products Purchasing Agents
1853	Agricultural and Food Scientists
18531	Agronomists
18543	Botanists
23903	County-Agricultural Agents
3220	Designers
32206	Floral Designers
3820	Biological Technologists and Technicians
5512	General Farmers
5622	Groundskeepers and Gardeners

WORK ACTIVITIES

- Plan what acreage to use for planting and select seedlings to plant and grow.
- Hire field workers and set up work schedules.
- Inspect crops for insects and diseases.
- Treat plants with proper chemicals.
- Trim and prune plants so they grow into certain shapes.
- Keep worker and production records.
- Arrange with customers for the sale of crops.
- May plan the landscape for private homes or businesses.
- May plant and position plants to make attractive displays.

APTITUDES

- Be able to learn the methods of horticulture farming and landscape gardening.
- Have average verbal and math abilities.
- Be able to handle a variety of work activities.
- Have average space and form perception, physical coordination, and hand and finger dexterity.
- Be able to plan and direct projects and supervise other workers.
- Be able to make decisions based on information and experience.

WORK SETTING

Environment
Work indoors and outdoors; may work outdoors in all kinds of weather.

Hours
Work 40 hours a week or more; longer work hours may be required during certain seasons.

Employers
Government agencies, colleges and universities, private businesses and corporations, cemeteries, private individuals, nurseries and greenhouses, and self-employed.

CONSIDERATIONS

- Job requires lifting of heavy loads weighing up to 100 pounds, stooping, kneeling, reaching, and walking.
- A person may be exposed to noisy machinery and certain machinery or chemical hazards.

NEBRASKA EMPLOYMENT

About 1,670 farmers are projected to be employed by 1991. Horticultural farmers are part of this group.

WAGES

Yearly earnings for horticultural farmers will vary depending on market prices reflecting consumer demand and crop yield. In Nebraska, average yearly earnings for horticultural farmers range between $15,000 and $20,000 a year. Due to the nature of this occupation, yearly earnings will vary from year to year. Nationally, average yearly earnings span a wide range of $10,000 to $50,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Favorable
Factors

- Environmental concern for the conservation and improvement of soil and a greater interest in landscaping homes, businesses, and public areas may result in some new job opportunities.

PREPARATION

SKILLS

- Knowledge of horticultural plant production and landscape gardening.
- Knowledge of various kinds of trees, shrubs, flowers, and plants.
- Skills in planning, supervising and record-keeping.
- Skills in sales.

TRAINING

- No specific education is required for this job.
- Graduation from training programs in horticulture and landscaping that are available at various community colleges, technical schools, colleges, and universities are helpful.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

115	Horticulture
116	Agricultural Business and Management
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, biology, vocational agriculture, agribusiness, marketing, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 270 and 273.
Guide for Occupational Exploration (2nd ed., 1984), pp. 134-137.
Occupational Outlook Handbook (1990-91 ed.), p. 308.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21101	Chadron State College
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22414	Nebraska College of Technical Agriculture
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Socttsbluff Campus

5612 FARM WORKERS

OCCUPATIONAL DESCRIPTION

Farm workers help with farm maintenance and operation by performing a variety of farm-related tasks. Duties vary with the type of farm and the season. They may plow, plant, fertilize, and cultivate and spray crops. Some may tend cattle or operate milking machines. They repair fences, buildings, and farm equipment.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Diversified Crops Farmworkers I (407.663-010)
Diversified Crops Farmworkers II (407.687-010)
General Farmworkers I (421.683-010)
General Farmworkers II (421.687-010)

NCIS RELATED OCCUPATIONS

1853	Agricultural and Food Scientists
5512	General Farmers
5514	Livestock Farmers
5617	Livestock Workers
5624	Animal Caretakers

WORK ACTIVITIES

- Operate farm machinery to till the soil and plant, cultivate, and fertilize crops.
- Mix pest and weed killers and spray them on crops.
- Harvest crops using machines or by hand.
- Haul feed to livestock.
- Repair and maintain farm machinery and farm buildings and fences.
- Clean farm areas.
- Irrigate fields.
- Milk cows.

APTITUDES

- Be able to learn basic farming operations and procedures.
- Have basic verbal and math skills.
- Be able to follow instructions.
- Have good space and form perception, physical coordination, and hand and finger dexterity.
- Be able to handle a variety of activities.
- Be able to make decisions based on information and work within set standards and exact time limits.

WORK SETTING

Environment
  Work mainly outdoors.
Hours
  Work varied hours depending on the season; may be 60 to 80 hours a week during planting and harvesting season.
Employers
  Independent farmers and farming corporations.

CONSIDERATIONS

- People who enjoy working outdoors may find this work satisfying.
- Workers must climb, stoop, reach, walk, and lift heavy loads.
- There are hazards involved with contact with chemical fumes, animal odors, and machine noises and with operating farm machinery.

NEBRASKA EMPLOYMENT

About 37,400 farm workers are projected to be employed by 1991.

WAGES

In Nebraska, farm workers paid on an hourly basis averaged $5.23 per hour giving workers who were employed for 12 months an average salary of $10,900 a year. Many farm workers receive housing and meals in addition to a base wage. The average yearly wage range for all farm workers in Nebraska is $9,000 to $14,000 a year. Nationally, the average yearly income for all farm workers spans a range between $7,500 and $15,500 a year. Many farm workers are hired on a seasonal basis only.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Unfavorable

Factors

- The number of jobs in this occupation is expected to decline because of the increasing use of better machinery and herbicides and the trend toward fewer farms.

PREPARATION

SKILLS

- Knowledge of farming operations and procedures.
- Skills in equipment repair and maintenance.
- Skills in following instructions quickly and accurately.

TRAINING

- High school is preferred with training given on the job.
- Experience in Future Farmers of America or 4-H, a farming background, and high school courses in agriculture are helpful.
- Postsecondary training at community colleges, technical schools, colleges, and universities is available.

EDUCATIONAL PROGRAM

111	Agricultural Production
112	Animal Sciences
113	Soil Sciences
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in biology, construction, vocational agriculture, agribusiness, small engines, and auto services.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 272 and 280.
Guide for Occupational Exploration (2nd ed., 1984), pp. 144-149.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
11944	Central Missouri State University
21102	Chadron State College
21311	Kearney State College
22402	McCook Community College
22304	Mid-Plains Community College
22414	Nebraska College of Technical Agriculture
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
21718	University of Nebraska-Lincoln
22205	Western Nebraska Community College-Scottsbluff Campus
22517	York College

5617 LIVESTOCK WORKERS

OCCUPATIONAL DESCRIPTION

Livestock workers help in the breeding, care, and marketing of livestock. They feed, clean, and groom animals and maintain farm buildings and equipment. Some may milk cows, collect eggs, or do similar tasks.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Livestock Farmworkers (410.664-010)
Livestock-Yard Attendants (410.674-018)
Dairy Farmworkers (410.684-010)
Poultry-Farmworkers (411.584-010)
Bee Workers (413.687-018)
Horse Trainers (419.224-010)

NCIS RELATED OCCUPATIONS

1853	Agricultural and Food Scientists
2701	Veterinarians
5512	General Farmers
5514	Livestock Farmers
5612	Farm Workers
5624	Animal Caretakers

WORK ACTIVITIES

- Mix feed, fill feed troughs, and water livestock.
- Examine animals for signs of illness and injury.
- Clean and repair stalls and sheds and feeding areas.
- Weigh animals and record weights.
- Wash and clip livestock and spray with insect repellents.
- Prepare animals and products for sale.
- Tend machines like milking machines.
- Train and exercise animals.

APTITUDES

- Be able to learn the methods of caring for livestock.
- Have average verbal skills.
- Be able to handle a variety of activities.
- Have good space and form perception, physical coordination, and hand and finger dexterity.
- Be able to make decisions based on observations.
- Be able to follow instructions.

WORK SETTING

Environment
 Work indoors and outdoors; must work outdoors in all kinds of weather.
Hours
 Work 40 to 80 hours a week.
Employers
 Farmers, ranchers, dairies, and private and state game farms and preserves.

CONSIDERATIONS

- Job involves heavy lifting of loads weighing from 50 to 100 pounds, stooping, reaching, and working in awkward positions.
- Job may be dangerous at times from kicking or stampeding livestock.

NEBRASKA EMPLOYMENT

About 37,400 farm workers are projected to be employed by 1991. Livestock workers are included in this group.

WAGES

In Nebraska, livestock workers paid on an hourly basis averaged $4.76 per hour giving workers employed for 12 months a yearly income of $9,800. Many livestock workers receive housing and meals as part of their income. The average yearly earnings for all livestock workers in Nebraska is between $8,000 and $10,000 a year. Nationally, the average yearly income for all livestock workers spans a range between $8,000 and $13,500 a year. Many livestock workers are hired on a part-time or seasonal basis.

EMPLOYMENT GROWTH

Nebraska
 Unfavorable
National
 Unfavorable
Factors
- The decline in the number of farms and ranches has decreased job opportunities.

- The consumption of beef has declined in recent years.

PREPARATION

SKILLS

- Knowledge of the methods of caring for livestock.
- Skills in building maintenance.
- Skills in recordkeeping.
- Skills in planting and harvesting.

TRAINING

- No special education is needed for this job, but many employers prefer workers who have completed high school.
- Most livestock workers learn their skills informally under the supervision of experienced workers.
- Courses in agriculture or animal science may be helpful.
- Training in several specialty occupations may be obtained through apprenticeship.

EDUCATIONAL PROGRAM

111	Agricultural Production
112	Animal Sciences
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in biology, construction, vocational agriculture, and agribusiness.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 276-278 and 280.
Guide for Occupational Exploration (2nd ed., 1984), pp. 141-149.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21311	Kearney State College
22402	McCook Community College
22304	Mid-Plains Community College
22414	Nebraska College of Technical Agriculture
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
21718	University of Nebraska-Lincoln
22205	Western Nebraska Community College-Scottsbluff Campus
22517	York College

5622 GROUNDSKEEPERS AND GARDENERS

OCCUPATIONAL DESCRIPTION

Groundskeepers and gardeners take care of lawns, trees, shrubs, flower gardens, and grounds in such places as parks, green-houses, golf courses, cemeteries, or estates. Their work duties may range from planting trees to mowing grass to digging ditches to repairing buildings and equipment.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Yard Workers (301.687-018)
Greenskeepers II (406.683-010)
Cemetery Workers (406.684-010)
Industrial-Commercial Groundskeepers (406.684-014)
Parks and Grounds Groundskeepers (406.687-010)
Lawn-Service Workers (408.684-010)
Landscape Laborers (408.687-014)

NCIS RELATED OCCUPATIONS

1853	Agricultural and Food Scientists
3220	Designers
32206	Floral Designers
5515	Horticultural Farmers

WORK ACTIVITIES

- Plant and tend trees, shrubs, and flowers.
- Seed and mow lawns, rake leaves, and keep grounds free of litter.
- Cut turf on golf courses with hand, power, or riding mowers.
- Dig graves.
- Shovel snow from walks and driveways.
- Keep park areas, trails, walks, and paths in good condition.
- Trim hedges and walkway edges.
- Repair fences, gates, walls, and walks.

APTITUDES

- Be able to learn basic gardening practices.
- Have average verbal and numerical abilities.
- Be able to perform repeated tasks and work within set standards.
- Have good space and form perception, physical coordination, hand and finger dexterity, and eye-hand coordination.
- Be able to follow instructions.
- Be able to do precise work.

WORK SETTING

Environment
Work outdoors; may work in all kinds of weather.
Hours
Work 40 hours a week usually; hours may be flexible on a daily or seasonal basis; part-time work may be available.
Employers
College and universities, industrial firms, golf courses, cemeteries, ball parks, football stadiums, recreation areas, government agencies, real estate developers, landscape services, private home owners, and self-employed.

CONSIDERATIONS

- Outdoor work may be satisfying.
- Job involves walking, climbing, stooping, and reaching and lifting medium loads.
- Work with power tools may be noisy.
- Employment may be seasonal.

NEBRASKA EMPLOYMENT

About 15,490 groundskeepers and gardeners are projected to be employed by 1991.

WAGES

Wages for groundskeepers and gardeners range between $5.75 and $8.74 per hour. Individuals employed full time for twelve months may expect yearly earnings between $12,000 and $18,100. In Nebraska, most groundskeepers and gardeners are employed on either a part time or seasonal basis only. Nationally, salaries for all groundskeepers and gardeners employed full time for 12 months range between $7,500 and $23,000 a year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors

- The outlook depends on the demand for landscaping and gardening services.
- Most openings will result from people leaving this occupation.

PREPARATION

SKILLS

- Knowledge of basic gardening and groundskeeping practices.
- Skills in using tools and equipment.
- Knowledge of plant science.
- Skills in repair and maintenance.
- Skills in following instructions.

TRAINING

- Most employers prefer workers with high school diplomas.
- Supervised training is usually given on the job.
- Formal training in grounds management, horticulture, and agronomy is available in one- and two-year programs in community colleges, technical schools, and universities.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

115	Horticulture
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in biology, construction, vocational agriculture, and small engines.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 223, 272, and 273.
Guide for Occupational Exploration (2nd ed., 1984), pp. 144-149.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22414	Nebraska College of Technical Agriculture
22306	Northeast Community College
21718	University of Nebraska-Lincoln

5624 ANIMAL CARETAKERS

OCCUPATIONAL DESCRIPTION

Animal caretakers care for and groom animals kept for sporting, recreation, exhibition, or research purposes. They feed the animals and check them for signs of injury or illness. Their duties may include cleaning, building, and repairing pens and sterilizing equipment. Some exercise animals and shoe animals' hooves or trim their toenails. DOT 410.674-010

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Stable Attendants (410.674-022)
Horseshoers (418.381-010)
Dog Groomers (418.674-010)

NCIS RELATED OCCUPATIONS

1853	Agricultural and Food Scientists
1854	Biological Scientists
2701	Veterinarians
3401	Athletes and Related Workers
5514	Livestock Farmers
5612	Farm Workers
5617	Livestock Workers

WORK ACTIVITIES

- Feed, water, exercise, clean, and groom animals.
- Clean and disinfect cages, pens, and yards.
- Sterilize surgical instruments and laboratory equipment.
- Check animals for signs of illness.
- Give prescribed treatments or medications according to instructions.
- Record information about each animal on charts or in files.
- May take inventory of supplies and order feeds.
- May perform office duties or serve as sales clerks.

APTITUDES

- Be able to learn duties of basic animal care.
- Have average verbal and numerical abilities.
- Be able to work within set standards and handle a variety of tasks.
- Have average space and form perception and eye-hand and physical coordination.
- Be able to make decisions based on data.
- Be able to do precise work accurately.

WORK SETTING

Environment
    Work indoors and outdoors.
Hours
    Work 40 hours a week usually; may include evenings, nights, or weekends.
Employers
    Veterinary hospitals, government agencies, colleges and universities, kennels, stables, humane societies, zoos, animal research centers, pet shops, animal experiment stations, racetracks, stables, and self-employed.

CONSIDERATIONS

- Workers should be able to lift medium loads, reach, and stand for long periods of time.
- Caretakers may come in contact with hazards such as bites, scratches, and animal diseases which can be transmitted to humans.

NEBRASKA EMPLOYMENT

About 3,030 animal caretakers are projected to be employed by 1991.

WAGES

Salaries for animal caretakers vary widely according to the nature of employment and the size and location of the employer. In Nebraska, hourly wages average between $4.50 and $5.00. The average yearly income for full time workers spans a range of $8,000 to $12,000. Nationally, the average annual income range for workers employed full time is between $7,000 and $18,000 a year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable

Factors

- The outlook depends upon growth of animal research.
- Most openings result from turnover, but a surplus of applicants causes keen competition.

PREPARATION

SKILLS

- Knowledge of animal habits and needs and care procedures.
- Knowledge of common laboratory procedures.
- Skills in keeping accurate records.
- Skills in following oral and written directions.
- Skills in handling animals.

TRAINING

- High school graduation is preferred by most employers.
- Training is given on the job under the supervision of an experienced animal health technician or veterinarian.
- Some experience caring for pets or a farm background may be helpful.
- Horseshoers can receive training through apprenticeship programs.

EDUCATIONAL PROGRAM

112	Animal Services
124	Agricultural Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in biology and vocational agriculture.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 276-277 and 279.
Guide for Occupational Exploration (2nd ed., 1984), pp. 141-143.
Occupational Outlook Handbook (1990-91 ed.), p. 304.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22402	McCook Community College
22304	Mid-Plains Community College
22414	Nebraska College of Technical Agriculture
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
21718	University of Nebraska-Lincoln
22517	York College

5720 FORESTRY WORKERS

OCCUPATIONAL DESCRIPTION

Forestry workers plant and care for trees. They may work on tree farms or serve as forester aides. Their duties may include harvesting forest products, clearing land, planting seedlings, and felling trees. Some compile information on forest areas and clean camp sites. DOT 452.687-010

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Christmas-Tree Farm Workers (451.687-010)
Forester Aides (452.364-010)
Forest Products Gathers (453.687-010)

NCIS RELATED OCCUPATIONS

18521 Foresters
18542 Biologists
18543 Botanists

WORK ACTIVITIES

- Work under supervision of foresters.
- Make timber inventories.
- Measure and evaluate trees.
- Mark trees for harvesting or thinning.
- Oversee harvesting operations.
- Plant new trees and other vegetation.
- Conduct land and topographic surveys.
- Supervise construction of roads, trails, and shelters.
- Detect and prevent fires, disease, and erosion.
- Give instructions to visitors and enforce forest regulations.

APTITUDES

- Be able to learn basic procedures of forest conservation and maintenance.
- Have average verbal and numerical abilities.
- Be able to follow instructions.
- Have average space and color perception, physical and eye-hand coordination, and hand and finger dexterity.
- Be able to see variations in color.
- Be able to move from one task to another using different skills.
- Be able to make decisions based on data.

WORK SETTING

Environment
Work outdoors in all kinds of weather.
Hours
Work 40 hours a week usually; longer hours possible overtime during certain seasons of the year.
Employers
Federal and state governments; logging firms; nurseries; seed gathering companies; lumbering, milling, and wood processing firms.

CONSIDERATIONS

- Job may be satisfying for people who enjoy working with their hands, collecting scientific information, and helping protect the environment.
- Workers must be able to climb, stoop, reach, walk, and carry medium loads.
- Forestry workers may be exposed to herbicides and the dangers of fire fighting.

NEBRASKA EMPLOYMENT

About 550 forestry and conservation workers are projected to be employed by 1991.

WAGES

In Nebraska, the average hourly wage for forestry workers is $5.22 per hour. The average yearly salary for forestry workers employed full time for 12 months is $10,816 a year. The yearly income range for all forestry workers spans a range between $9,000 and $12,000 a year. In Nebraska a significant proportion of forestry workers are employed on a seasonal basis. Nationally, the yearly income range for all forestry workers employed full time is much higher than the income range for Nebraska at $12,900 to $25,000 a year.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Unfavorable

189

Factors

- Cutbacks in federal and state funding has resulted in reduced hiring by government agencies.
- Competition is strong because of the surplus of applicants.
- Prospects are best with private employers and cooperatives.

PREPARATION

SKILLS

- Knowledge of trees and forestry science.
- Skills in using forestry tools and equipment.
- Skills in drafting, surveying, and first aid.
- Skills in construction.
- Skills in recordkeeping.

TRAINING

- The minimum educational requirement is high school graduation.
- Most employers prefer applicants who have work experience or training in forestry management or natural resources.
- Previous work experience in tree planting, timber cutting, surveying, or fire fighting may be helpful.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

118	Forestry and Natural Resources
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in biology, vocational agriculture, construction, drafting, and geography.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 283-284 and 285.
Guide for Occupational Exploration (2nd ed., 1984), pp. 138-140.

SCHOOLS

11902	Colorado State University
21507	Doane College
11907	Iowa State University
11908	Kansas State University
21311	Kearney State College
22402	McCook Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
22414	Nebraska College of Technical Agriculture
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
11922	University of Missouri-Columbia
21718	University of Nebraska-Lincoln
22205	Western Nebraska Community College-Scottsbluff Campus

6111 AUTOMOBILE MECHANICS

OCCUPATIONAL DESCRIPTION

Automobile mechanics service and repair cars and other gas-powered vehicles. While most of these mechanics perform a variety of repairs, some specialize in the repair of a certain part of a car such as brakes, trans-mission, or engine. They use many differ-ent hand tools, power tools, and testing instruments to do their work. DOT 620.261-010

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Automobile-Service-Station Mechanics (620.261-030)
Automotive-Cooling-System Diagnostic Technicians (620.261-034)
Air-Conditioning Mechanics (620.281-010)
Transmission Mechanics (620.281-062)
Tune-Up Mechanics (620.281-066)
Muffler Installers (807.664-010)
Military Automotive Mechanics (M61110)

NCIS RELATED OCCUPATIONS

6112	Diesel Engine Mechanics
6114	Small Engine Repairers
6116	Aircraft Mechanics
6117	Heavy Equipment Mechanics
6118	Farm Equipment Mechanics
8730	Garage and Service Station Attendants

WORK ACTIVITIES

- Rotate and balance tires.
- Add or change engine oil and brake, transmission, or power steering fluids.
- Determine problems that need to be corrected.
- Prepare cost estimates and submit to customers for approval.
- Use hoists, wrenches, gauges, drills, and other specialized machines and tools to make repairs.
- Repair or replace parts.
- May be required to perform all types of repair jobs in a small shop.
- May specialize in certain repair jobs, such as repairing transmissions, electrical systems, or brakes in a large shop.

APTITUDES

- Be able to learn the basics of automobile repair.
- Have average reading and math abilities.
- Be able to make decisions based on observation, data, and experience.
- Have average physical and eye-hand coordination and hand and finger dexterity.
- Be able to visualize objects from pictures and to see slight differences in objects.
- Be able to work within set standards and do precise work.

WORK SETTING

Environment
Work indoors in garages or repair shops.
Hours
Work 40 to 48 hours a week; longer hours and Saturday work is possible.
Employers
Car dealers, rental agencies, automobile repair shops, service stations, auto supply stores, companies with large numbers of cars, and self-employed.

CONSIDERATIONS

- Job involves lifting of medium loads, contact with noises and fumes, and dangers of working near moving parts.
- Workers may have to provide own tools.
- Mechanics are often guaranteed a weekly salary plus a commission based on the labor charge.

NEBRASKA EMPLOYMENT

About 6,120 automobile mechanics are projected to be employed by 1991.

WAGES

Hourly wages for automobile mechanics range from a reported low of $6.83 per hour to a high of $11.67 per hour. The average starting salary range for all automobile mechanics in Nebraska is between $14,352 and $23,504. The higher salaries will be paid to individuals with the most training, an area of specialization and found in a major metropolitan area. Nationally salaries are somewhat higher than in Nebraska, with a range of $18,096 to $36,192 a year. Most automobile mechanics do independent repairs in addition to full time employment to supplement their income.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Favorable
Factors

- This is a large occupation with a fairly high turnover rate.
- The growing complex technology in automobiles makes it difficult for owners to make their own repairs and increases demand for mechanics.
- More automobiles have features that require maintenance which increases job opportunities.

PREPARATION

SKILLS

- Knowledge of automobiles.
- Skills in problem solving.
- Skills in using tools and equipment of automobile repair.
- Skills in repairing and adjusting auto mechanical and electrical systems.
- Skills in reading manuals and technical bulletins.

LICENSING OR CERTIFICATION

- Certification is not required but is available for certain repair skills from the National Institute for Automotive Service Excellence.
- To be certified, a person must have two years of work experience or a conbination of technical education and experience and pass an exam.

TRAINING

- Many employers prefer formal technical training in automotive repair, while others prefer previous work experience.
- Other methods of preparation are apprenticeship training programs and on-the-job training.

EDUCATIONAL PROGRAM

278	Vehicle & Mobile Equipment Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, business math, physics, small engines, auto services, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 537-538 and 820.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218 and 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 329.
Military Career Guide (1988-89 ed.), p. 128.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
99827	Universal Technical Institute
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6112 DIESEL ENGINE MECHANICS

OCCUPATIONAL DESCRIPTION

Diesel engine mechanics service and repair engines used to power industrial vehicles and machinery. This includes bus, truck, train, and boat engines as well as engines used to power machines. They maintain, repair, overhaul, and re-build diesel engines. Some perform all types of work on diesel engines while others specialize in working on certain types or certain parts of engines. DOT 625.281-010

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Industrial Truck Mechanics (620.281-050)
Tractor Mechanics (620.281-058)
Military Engine Mechanics (M61120)
Military Marine Engine Mechanics (M61121)

NCIS RELATED OCCUPATIONS

6111	Automobile Mechanics
6116	Aircraft Mechanics
6117	Heavy Equipment Mechanics
6118	Farm Equipment Mechanics

WORK ACTIVITIES

- Lubricate and adjust moving parts.
- Change oil.
- Keep engines operating smoothly and efficiently.
- Use diagnostic equipment and experience to locate causes of problems.
- Make adjustments, repairs, and replacements.
- Disassemble parts of engine for repairs.
- Assemble and adjust engine so it functions properly.
- May operate diesel installations.

APTITUDES

- Be able to learn diesel mechanics.
- Have average reading and math skills.
- Be able to do a variety of tasks and work within set standards.
- Have good space and form perception and physical coordination and hand and finger dexterity.
- Be able to make decisions based on data, experience, and observations.

WORK SETTING

Environment
  Work indoors in repair shops.
Hours
  Work 40 to 48 hours a week with possible overtime and evening and Saturday work.
Employers
  Diesel engine manufacturers; repair shops; dealers in diesel powered vehicles; truck rental firms; firms that own large fleet of trucks; government agencies; ship, bus, and railroad companies; and electric generating plants.

CONSIDERATIONS

- Work may be noisy, dirty, and greasy and require heavy lifting.
- Mechanics may have to buy their own tools.

NEBRASKA EMPLOYMENT

About 2,070 diesel engine mechanics are projected to be employed by 1991.

WAGES

The lowest reported hourly wage for a diesel engine mechanic in Nebraska is $8.11 per hour, and highest $12.77 per hour. The annual salary range in Nebraska is quite broad at $16,850 to $26,600 a year. The average yearly salary for all diesel engine mechanics in Nebraska is $18,000 a year. Nationally, salaries tend to parallel those of Nebraska with an average hourly wage of $13.35.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Favorable

Factors

- Many new jobs will result from the increased use of diesel engines for industrial, transportation, and farm equipment.

PREPARATION

SKILLS

- Knowledge of diesel engines.
- Skills in using tools and equipment used in diesel engine repair.
- Skills in problem solving.
- Skills in reading manuals and technical bulletins.
- Skills in recognizing mechanical problems.

TRAINING

- Most employers prefer to hire people with formal technical training or work experience.
- Formal training is available from technical schools or community colleges and is followed by on-the-job training.
- Other methods of preparation include apprenticeship programs and on-the-job training.

EDUCATIONAL PROGRAM

278	Vehicle & Mobile Equipment Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, business math, physics, small engines, auto services, electrical/electronics, energy/ power systems, and manufacturing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 538 and 545.

Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.

Occupational Outlook Handbook (1990-91 ed.), p. 337.

Military Career Guide (1988-89 ed.), pp. 131 and 134.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
99827	Universal Technical Institute
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

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6114 SMALL ENGINE REPAIRERS

OCCUPATIONAL DESCRIPTION

Small engine repairers service and recondition small engines used in chain saws, motorcycles, motorboats, and lawn mowers. They obtain a description of the problem from the customer and then determine what is causing the problem and install new parts or make adjustments. They use precision-measuring tools, hand tools, and machine tools.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Motorcycle Repairers (620.281-054)
Motorboat Mechanics (623.281-038)
Service Engine Repairers (625.281-018)
Gas-Engine Repairers (625.281-026)
Small-Engine Mechanics (625.281-034)

NCIS RELATED OCCUPATIONS

6111	Automobile Mechanics
6117	Heavy Equipment Mechanics

WORK ACTIVITIES

- May receive incoming jobs and write service orders.
- Use instruments and gauges to measure engine performance.
- Do repair work which may include tuning ignition systems, overhauling carburetors, replacing piston rings, honing cylinders, and installing new bearings.
- Test engine under operating conditions and make necessary adjustments.
- Read parts catalogs to locate needed parts.
- Follow repair manual instructions.

APTITUDES

- Be able to learn the methods used in repairing small engines.
- Have average reading abilities.
- Be able to do precise work accurately.
- Have good space and form perception, physical coordination, and manual dexterity.
- Be able to make decisions based on facts and knowledge.
- Have basic mechanical aptitudes.
- Be able to do repetitious tasks.

WORK SETTING

Environment
Work mainly indoors in repair shops.

Hours
Work 40 hours a week with an increased work load possible during warm weather.

Employers
Motorcycle dealers, boat dealers, nurseries, and garden stores, hardware stores, chainsaw and lawn mower dealers, marinas, service departments of stores, shops specializing in small-engine repairs, and self-employed.

CONSIDERATIONS

- Mechanics may have to provide their own hand tools.
- Work involves contact with greasy engine parts and requires lifting of medium loads.

NEBRASKA EMPLOYMENT

About 330 small engine repairers are projected to be employed by 1991.

WAGES

Salaries for small engine repairers will vary according to the type, size and geographic location of the employer. In Nebraska, annual earnings range between $12,500 and $22,000 a year. The higher salaries will go to individuals with the most training completed and in most cases, some experience in engine repair or related fields. Nationally, salaries vary widely spanning a range between $12,900 and $21,840 a year. The national salary average is $16,800 a year.

EMPLOYMENT GROWTH

Nebraska
Favorable

National
Somewhat Favorable

Factors

- The employment outlook depends upon consumer demand for vehicles used in work and recreation.
- Prospects for small engine mechanics are best for those who can work on a variety of engines or who have formal training or experience.

PREPARATION

SKILLS

- Knowledge of specific engines on which they work.
- Knowledge of the proper use and care of tools and equipment.
- Skills in diagnosing engine problems.
- Skills in reading service manuals and doing shop math.
- Skills in welding and blueprint reading are helpful.

TRAINING

- Employers prefer to hire high school graduates.
- Training is available through on-the-job experience, apprenticeship programs, or vocational or technical school instruction.
- Previous work experience in engine repair is helpful.
- Some employers may send trainees to factory-sponsored courses.

EDUCATIONAL PROGRAM

278	Vehicle & Mobile Equipment Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, basic math, physics, energy/power systems, small engines, drafting, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 538, 543, and 545.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 326.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
99827	Universal Technical Institute
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6115 AUTOMOBILE BODY REPAIRERS

OCCUPATIONAL DESCRIPTION

Automobile body repairers fix and refinish damaged vehicle bodies. They straighten bent frames, remove dents, and replace crumpled parts that are beyond repair. Some may straighten bumpers or replace broken glass. Others install custom equipment at customers' request. They use a variety of equipment and tools including drills, welders, files, sanders, and power machinery. DOT 807.381-010

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Shop Estimators (807.267-010)
Truck-Body Builders (807.281-010)
Automobile-Body Customizers (807.361-010)
Fiberglass Auto-Body Repairers (807.381-030)
Frame Straighteners (807.484-010)
Paint Sprayer Sandblasters (845.381-014)
Glass Installers (865.684-010)
Military Automotive Body Repairers (M61150)

NCIS RELATED OCCUPATIONS

6824	Sheet Metal Workers
7669	Painting Machine Operators
7714	Welders

WORK ACTIVITIES

- Examine damaged vehicles and estimate repair costs.
- Remove accessories and trim.
- Beat surface to remove dents.
- File, grind, or sand parts.
- Fill deep dents with lead or body plastic.
- File or sand lead or plastic until part is smooth and blends with the rest of the surface.
- Weld breaks.
- Install upholstery.
- Align body frames, body parts, window openings, and doors.
- May paint repaired or replaced parts.
- Replace parts.
- Check and repair or replace body hardware such as door locks, handles, and interior trim.
- May install auto glass.

APTITUDES

- Be able to learn the processes of automotive body repair.
- Have average ability with words and numbers.
- Be able to visualize objects from drawings and blueprints and to see slight differences in objects.
- Have good space and form perception, physical coordination, and hand and finger dexterity.
- Be able to handle a variety of tasks and do precision work.

WORK SETTING

Environment
Work indoors in auto repair shops.
Hours
Work 40 to 48 hours a week.
Employers
Auto repair and paint shops, service departments of car and truck dealers, trucking and taxicab companies, and self-employed.

CONSIDERATIONS

- Some repairers are paid on a commission basis.
- A person must be able to stoop, reach, and lift medium loads up to 50 pounds.
- Workers may be exposed to dust, paint fumes, and noise.
- Repairers may have to purchase their own tools.

NEBRASKA EMPLOYMENT

About 1,800 automobile body repairers are projected to be employed by 1991.

WAGES

Salaries for automobile body repairers will vary according to the size and location of the repair facility as well as the type of repair facility. In Nebraska, annual salaries will range between $16,500 and $23,000 a year. Nationally, the average annual salary for all automobile body repairers is $35,516 a year. Helpers and trainees generally earn 30 percent to 70 percent less than skilled workers.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable
National
Favorable
Factors

- Traffic accidents are expected to increase as the number of motor vehicles increases.
- The new, lighter weight automobiles are prone to greater collision damage than the older, heavier design which increases the demand for repairers.
- People who can do all types of body repair work will find the best opportunities.

PREPARATION

SKILLS

- Knowledge of automobile construction and repair techniques.
- Skills in weldling, sheet metal fabrication, and repair of auto suspension and electrical systems.
- Skills in use of materials, tools, and equipment.
- Skills in picturing the finished products.
- Skills in recordkeeping.

TRAINING

- The minimum educational requirement for most positions is high school graduation.
- Training for automobile body repairers may take the form of on-the-job training apprenticeship programs, or formal training at vocational or technical schools or community colleges.

EDUCATIONAL PROGRAM

278	Vehicle & Mobile Equipment Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, shop, auto services, metal working, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 819, 820, and 864.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 327.
Military Career Guide (1988-89 ed.), p. 129.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
99827	Universal Technical Institute
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6116 AIRCRAFT MECHANICS

OCCUPATIONAL DESCRIPTION

Aircraft mechanics service, repair, and overhaul airplanes and airplane engines. Working from blueprints and engineering orders, they inspect, repair, and service aircraft engines, wiring, brakes, landing gear, and flight controls. They use hand tools, power tools, welders' rivit guns, metalworking machines, and precision-measuring devices.

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Airframe-and-Power-Plant Mechanics (621.281-014)
Aircraft Accessories Mechanics (621.381-014)
Aviation Support Equipment Repairers (639.281-010)
Aircraft Rigging and Mechanics Controls (806.281-038)
Heat and Vent Aircraft Mechanics (806.381-014)
Aircraft Body Repairers (807.261-010)
Military Aircraft Mechanics (M61160)

NCIS RELATED OCCUPATIONS

6111	Automobile Mechanics
6112	Diesel Engine Mechanics
6117	Heavy Equipment Mechanics
6118	Farm Equipment Mechanics

WORK ACTIVITIES

- Inspect aircraft components visually and with the use of testing equipment.
- Service, repair, and overhaul aircraft and aircraft engines.
- Repair, replace, and assemble parts such as fuselage, landing gear, or fuel tanks.Read manual for specifications.
- Do visual examinations, listen to engine, and do electronic tests to find possible problems.
- Service aircraft by cleaning screens, greasing parts, and checking brakes.

APTITUDES

- Be able to learn the procedures of aircraft inspection and repair.
- Have good reading and math abilities.
- Be able to do precise work accurately.
- Have good space and form perception, physical coordination, and hand and finger dexterity.
- Be able to handle a variety of responsibilities and make decisions based on data.
- Have ability to visualize objects from pictures and drawings and to see slight differences in drawings.

WORK SETTING

Environment
Work indoors in aircraft hangers and outdoors.

Hours
Work 40 hours a week; schedule may include evenings, nights, weekends, and holidays.

Employers
Aircraft dealers, noncertified air carriers, airlines, aerial surveyors, crop spraying firms, airport terminals, government agencies, large corporations, and self-employed.

CONSIDERATIONS

- Mechanics working for airlines may receive reduced fare transportation.
- Work involves contact with grease, noise, and fumes.
- Reaching, stooping, and lifting of medium loads is required.

NEBRASKA EMPLOYMENT

About 300 aircraft mechanics are projected to be employed by 1991.

WAGES

Annual salaries for aircraft mechanics will vary according to the size and geographic location of the employer as well as the type of repair facility. In Nebraska, salaries range between $19,850 and $26,500 a year depending on training and experience. Nationally, salaries range from $20,800 to $48,800 a year. The median salary is $26,000.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Somewhat Favorable
Factors

- Declines in air travel during economic downturns reduce the number of flights and the number of maintenance positions.
- Most jobs will result from replacement not growth.
- There is less competition for jobs in smaller companies because of lower wages.

PREPARATION

SKILLS

- Knowledge of the parts and systems of aircraft and procedures, materials, and equipment used in service and repair.
- Knowledge of FAA rules, safety standards, and regulations.
- Skills in problem solving.
- Skills in understanding technical instructions.

LICENSING OR CERTIFICATION

- Aircraft mechanics must be licensed by the Federal Aviation Administration (FAA).
- The FAA requires graduation from an FAA-approved school or at least 18 months of work experience for an airframe or power plant license. For a combined license, an applicant must be a graduate of an approved school or have at least 30 months of experience working with both engines and airframes. In addition, applicants must pass written and oral tests and demonstrate their abilities as mechanics

TRAINING

- Most employers prefer to hire graduates from FAA-approved postseondary training programs.
- Another source of training is through an apprenticeship training program.

EDUCATIONAL PROGRAM

275	Aviation Maintenance
631	Apprenticeship Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, algebra, geometry, chemistry, physics, energy/power systems, auto services, small engines, drafting, electrical/electronics, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 540, 541, 557, 813, and 819.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 326.
Military Career Guide (1988-89 ed.), p. 127.

SCHOOLS

21810	Embry-Riddle Aeronautical University
21808	Grace College of the Bible
22214	Western Nebraska Community College-Sidney Campus

6117 HEAVY EQUIPMENT MECHANICS

OCCUPATIONAL DESCRIPTION

Heavy equipment mechanics maintain and repair the mechanical units in trucks, buses, trains, construction machinery, and other heavy equipment. They operate and inspect machines and use meters and gauges to determine any problems and damage and wear. The tools they use include mechanics' hand tools, jacks, and hoists. They may weld, straighten, bolt, and refit structural mental assemblies.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Construction-Equipment Mechanics (620.261-022)
Mechanical-Unit Repairers (620.381-018)
Car Repairers (Railroad) (622.381-014)
Military Heavy Equipment Mechanics (M61170)

NCIS RELATED OCCUPATIONS

6111	Automobile Mechanics
6112	Diesel Engine Mechanics
6114	Small Engine Repairers
6116	Aircraft Mechanics
6178	Millwrights

WORK ACTIVITIES

- Observe and listen to functioning equipment and test equipment components.
- Remove vehicle parts to examine for damage and wear.
- Check parts for defects.
- Replace assemblies and repair and replace steel sections.
- Weld broken parts.
- Replace window glass.

APTITUDES

- Be able to learn the methods of repairing and rebuilding heavy equipment.
- Have average verbal and math abilities.
- Be able to make decisions based on facts.
- Have average space and form perception, physical coordination, and hand and finger dexterity.
- Be able to see slight differences in objects and to visualize objects from pictures and drawings.
- Be able to work within set limits.

WORK SETTING

Environment

Work inside or outside; may work outside in all kinds of weather; may travel to remote places to do repairs.

Hours

Work 40 hours a week usually; may include weekend work.

Employers

Heavy equipment and truck wholesalers; trucking firms; construction contractors; railroads; logging, lumber, and wood products companies; bus companies; mining companies; repair shops; and self-employed.

CONSIDERATIONS

- Job requires lifting of heavy loads weighing up to 100 pounds, climbing, stooping, and reaching and good vision and hearing.
- Workers are sometimes exposed to noise and hazards.
- Most mechanics buy their own tools.

NEBRASKA EMPLOYMENT

About 670 heavy equipment mechanics are projected to be employed by 1991.

WAGES

Salaries for heavy equipment mechanics will vary according to the size and location of the repair facility, dealership or other related business. In Nebraska salaries range from $18,000 to $23,000 a year. The highest salaries will go to individuals who have completed training at a community college and have some related experience and are located in a major population area. Nationally, average salaries span a range of $19,240 to $31,200 a year.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Somewhat Favorable
Factors

- Most job opportunities will result from replacement needs.
- Demand for these workers may decrease due to the decrease in railroad traffic and in construction and an increase in use of automation for repairing and assembling.

PREPARATION

SKILLS

- Knowledge of methods used in rebuilding and repairing heavy equipment.
- Knowledge of drive systems, transmissions, brakes, clutches, engines, hydraulics, electrical and air systems, and electronics.
- Skills in problem solving.
- Skills in reading and interpreting manuals, blueprints, and schematics.
- Skills in using tools and equipment of the trade.

LICENSING OR CERTIFICATION

- Certification is not required but is available through the National Institute for Automotive Service Excellence. Mechanics may be certified in one or more of the six areas including brakes, electrical systems, and steering and suspension.
- To be certified, applicants must pass a written exam and have at least two years of experience. Formal educational training may be substituted for one year of experience

TRAINING

- Most employers prefer high school graduates with some additional training.
- Formal training is available at technical schools and community colleges.
- Other ways to prepare for the occupation is through apprenticeship programs and on-the-job training.

EDUCATIONAL PROGRAM

278	Vehicle & Mobile Equipment Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, algebra, geometry, physics, energy/power systems, auto services, metal working, electrical/electronics, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 537, 539, and 542.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 348.
Military Career Guide (1988-89 ed.), p. 133.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
99827	Universal Technical Institute
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6118 FARM EQUIPMENT MECHANICS

OCCUPATIONAL DESCRIPTION

Farm equipment mechanics service and repair machinery, equipment, and vehicles used on farms to plant, tend, harvest, move, process, and store plant and animal products. This equipment includes tractors, combines, plows, pumps, trucks, and balers. They use many basic hand tools and may use power tools or welding and testing equipment to do repair work. DOT 624.281-010

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Sprinkler-Irrigation-Equipment Mechanics (624.361-014)
Farm-Equipment Mechanics II (624.381-014)
Dairy-Equipment Repairers (629.281-018)

NCIS RELATED OCCUPATIONS

6111 Automobile Mechanics
6112 Diesel Engine Mechanics
6116 Aircraft Mechanics

WORK ACTIVITIES

- Lubricate, adjust, or replace machine parts.
- Sharpen cutting edges.
- Clean air filters.
- Change spark plugs.
- Locate problem through visual inspection, by listening to equipment, and by using test equipment.
- Repair or replace defective parts, make adjustments, and check to see machine is working properly.
- Weld broken or cracked parts.
- Perform major overhauls.
- May provide instruction concerning care and maintenance of the equipment.
- May assemble new implements and machinery.

APTITUDES

- Be able to learn methods of repairing farm machinery and implements.
- Have average ability with words and numbers.
- Be able to visualize objects from pictures and drawings and to see slight differences in objects.
- Have average space and form perception, eye-hand coordination, and finger and hand dexterity.
- Be able to do a variety of tasks, make decisions based on data, and work within set standards.

WORK SETTING

Environment

Work indoors and outdoors making emergency repairs; may travel to farms to make equipment repairs.

Hours

Work 40 hours a week usually; may work longer hours during planting and harvesting seasons; may work Saturdays.

Employers

Large farms, farm equipment dealers, manufacturers, repair shops, and self-employed.

CONSIDERATIONS

- Work involves lifting of medium loads, contact with noise and grease, and possible danger when working with heavy equipment.
- Most mechanics provide their own tools.

NEBRASKA EMPLOYMENT

About 1,340 farm-equipment mechanics are projected to be employed by 1991.

WAGES

Hourly wages for farm equipment mechanics range from a reported low of $6.83 per hour to a high of $11.67 per hour. The average starting yearly salary range for all full-time farm equipment mechanics in Nebraska is between $14,352 and $23,504. Nationally, salaries range from $12,300 to $22,700 a year. Many farm equipment mechanics do independent repair work in addition to full-time employment to supplement their income.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National
Unfavorable
Factors

- Most openings are to fulfill replacement needs.
- Opportunities are related to the downturn in the agricultural economy and the increasing number of farmers who do their own repair work.

PREPARATION

SKILLS

- Knowledge of farm machinery and methods used in maintenance and repair.
- Skills in problem-solving.
- Skills in following instructions in books and manuals.
- Skills in using the tools and equipment of the trade.

TRAINING

- Employers prefer to hire people who are high school graduates with a farm background.
- Most farm equipment mechanics are trained on the job under the supervision of an experienced mechanic.
- Apprenticeship programs are available in some areas.
- Some vocational or technical schools or community colleges offer formal training programs.

EDUCATIONAL PROGRAM

125	Agricultural Mechanics
278	Vehicle & Mobile Equipment Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, math, energy/power systems, vocational agriculture, agribusiness, small engines, auto services, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 544 and 548.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 342.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
99827	Universal Technical Institute
21718	University of Nebraska-Lincoln
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6151 COMMUNICATIONS EQUIPMENT REPAIRERS

OCCUPATIONAL DESCRIPTION

Communications equipment repairers install, repair, and service communications equipment. This may include telephone, telegraph, radio, or television equipment. The tools used include testing devices, power tools, hand tools, and soldering irons. They follow wiring diagrams and blueprints to determine how to repair and assemble parts of electrical systems.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Instrument Repairers (722.281-010)
Audio-Video Repairers (729.281-010)
Community-Antenna-Television Line Technicians (821.261-010)
Television-Cable Installers (821.281-010)
Central Office Repairers (822.281-014)
Public Address Servicers (823.261-010)
Satellite Communications Antenna Installers (823.261-022)
Sound Technicians (829.281-022)
Military Teletype Repairers (M61510)

NCIS RELATED OCCUPATIONS

3930	Radio Operators
6153	Electrical and Electronic Repairers
6154	Data Processing Equipment Repairers
6155	Home-Entertainment Equipment Repairers
6156	Household Appliance Repairers
6158	Telephone Installers and Repairers
6171	Precision Instrument Repairers
6433	Electrical Power Installers and Repairers

WORK ACTIVITIES

- Repair or install electrical equipment using diagrams and blueprints.
- Test and repair equipment using test meters and hand tools.
- Make adjustments and clean equipment parts.
- May work on switchboards, receivers, radar units, amplifiers, movie projectors and public address systems.
- May drive a truck to repair assignments.
- May climb poles to work on cables.

APTITUDES

- Be able to learn the methods of installing and repairing communications equipment.
- Have average ability with words and numbers.
- Be able to make decisions based on data and to do precise work accurately.
- Have average space and form perception, hand and finger dexterity, and eye-hand coordination.
- Be able to handle a variety of work activities.
- Be able to see slight differences in objects and visualize objects from drawings and blueprints.

WORK SETTING

Environment

Work indoors and outdoors; may require local travel.

Hours

Work 40 hours a week; during emergencies may include evenings, weekends, or holidays hours; may be on call for emergencies.

Employers

Airplane and aerospace manufacturers, airlines, radio and television broadcasting companies, retail stores, telephone and telegraph companies, companies that manufacture and repair electronic products and parts, and educational institutions.

CONSIDERATIONS

- This job requires light lifting, climbing, stooping, reaching, and working with hands.
- Workers should be able to see and hear well.

NEBRASKA EMPLOYMENT

About 600 communications equipment repairers are projected to be employed by 1991.

WAGES

Salaries for communications equipment repairers will vary according to the type, size and geographic location of the employer as well as the training and experience of the worker. In Nebraska, annual earnings will range between $15,850 and $22,200 a year. Nationally, average salaries for workers represented by a union between $28,600 and $33,800 per year. The higher entry level salaries will go to individuals who have completed an accredited training program through a community college or private vocational school and who work in a major metropolitan area.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Somewhat Favorable
Factors
- Increased use of equipment such as audio-video and cable television equipment will lead to a need for these repairers.
- But the change to electronic equipment that needs fewer repairs will decrease the need for repairers.

PREPARATION

SKILLS

- Knowledge of communications equipment and methods for installation and repair.
- Skills in problem solving and diagnosis.
- Skills in using the equipment of the trade.
- Skills in reading and interpreting manuals, diagrams, and blueprints.

TRAINING

- The minimum educational requirement is high school graduation.
- Formal training either in high school or technical schools or community colleges is helpful.
- Training is also available through apprenticeship programs or on-the-job training.

EDUCATIONAL PROGRAM

292	Electrical and Electronics Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, media production, energy/power systems, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 694, 705, 832, 835, 837, and 845.
Guide to Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 333.
Military Career Guide (1988-89 ed.), p. 153.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6152 ELECTRIC MOTOR REPAIRERS

OCCUPATIONAL DESCRIPTION

Electric motor repairers install, recondition, and service electrical equipment such as motors, transformers, batteries, wiring, and switches. They follow blueprints or diagrams and use testing devices and hand tools. These workers take machines apart, replace defective parts, and solder loose connections.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Electric-Motor Analysts (721.261-010)
Automotive-Generator-and-Starter Repairers (721.281-010)
Electric-Motor Repairers (721.281-018)
Transformer Repairers (724.381-018)
Battery Repairers (727.381-014)
Military Electrical Products Repairers (M61520)

NCIS RELATED OCCUPATIONS

6153	Electrical and Electronic Repairers
6154	Data Processing Equipment Repairers
6155	Home-Entertainment Equipment Repairers
6156	Household Appliance Repairers
6432	Electricians
6433	Electrical Power Installers and Repairers

WORK ACTIVITIES

- Inspect machines and watch and listen to them work to determine what is wrong.
- Take machine apart and replace defective parts.
- Solder loose connections and rewire electrical systems.
- Test and recharge batteries.
- Adjust brakes and belts.
- Reassemble and adjust repaired machines and motors.
- May test coils and wind new coils on armatures of motors.

APTITUDES

- Be able to learn the techniques of electrical repair.
- Have average use of words and numbers.
- Be able to handle a variety of activities and do precise work accurately.
- Have average space and form perception and hand and finger dexterity.
- Be able to make judgments based on data.

WORK SETTING

Environment
Work indoors; may travel locally to install, repair, or service equipment.
Hours
Work 40 to 48 hours a week.
Employers
Automotive repair shops, shops that specialize in repairing electrical motors, electrical equipment manufacturers and retailers, utility companies, and self-employed.

CONSIDERATIONS

- People who enjoy working independently and using their hands to work with tools may like this job.
- Job requires someone who can stoop, reach, and carry loads weighing 50 pounds or more.
- Repairers may be cut on sharp edges or suffer electrical shocks.

NEBRASKA EMPLOYMENT

About 150 electric motor repairers are projected to be employed by 1991.

WAGES

In Nebraska, the lowest hourly wage reported for electric motor repairers is $6.60 per hour, the highest reported hourly wage is $9.32 per hour. The annual salary range for all electric motor repairers is between $13,728 and $19,400. The average entry level hourly wage is $8.00 per hour with an annual salary of $16,640 for individuals who have completed an accredited training program with some experience. Nationally, the annual salary range is somewhat broader at $16,000 to $30,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Somewhat Favorable
Factors
- Most openings will result from turnovers and job turnovers are high in this occupation.

PREPARATION

SKILLS

- Knowledge of electrical motors and equipment and techniques of repair.
- Skills in diagnosis and problem-solving.
- Skills in using tools of the trade.
- Skills in reading and interpreting manuals.

TRAINING

- The minimum educational requirement is usually high school graduation.
- Most technical and trade schools and community colleges offer training in electric motor repair.
- Other forms of training are provided on the job and through apprenticeship programs.
- Some employers may send experienced workers to factory training centers to learn new methods of repair.

EDUCATIONAL PROGRAM

278	Vehicle & Mobile Equipment Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, math, energy/power systems, small engines, auto services, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 691-692, 696, and 702.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Military Career Guide (1988-89 ed.), p. 141.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
99827	Universal Technical Institute
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6153 ELECTRICAL AND ELECTRONIC REPAIRERS

OCCUPATIONAL DESCRIPTION

Electrical and electronic repairers install, repair, and service electronic equipment used in business and industry. They may work with computer, radar, or missile-control systems or with systems that control industrial machinery or processes.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Powerhouse Electricians (820.261-014)
Substation Electricians (820.261-018)
Electronics-Sales-and-Service Technicians (828.251-010)
Field Engineers (828.261-014)
Maintenance Electricians (829.261-018)
Electronics Mechanics (828.281-010)
Electrical Repairers (829.281-014)
Trouble Shooters I (952.364-010)
Electric Powerline Examiners (959.367-010)
Military Space Systems Specialists (M61530)
Military Powerhouse Mechanics (M61531)
Military Radar and Sonar Equipment Repairers (M61532)
Military Radio Equipment Repairers (M61533)
Military Electronic Weapons Systems Repairers (M61534)
Military Electronic Instrument Repairers (M61535)
Military Aircraft Electricians (M61536)
Military Power Plant Electricians (M61537)
Military Ship Electricians (M61538)

NCIS RELATED OCCUPATIONS

3711	Electrical and Electronic Engineering Technicians
6151	Communications Equipment Repairers
6152	Electric Motor Repairers
6154	Data Processing Equipment Repairers
6155	Home-Entertainment Equipment Repairers
6156	Household Appliance Repairers
6432	Electricians
6433	Electrical Power Installers and Repairers

WORK ACTIVITIES

- Inspect and test electrical equipment and wiring for defects.
- Observe equipment in operation and clean and lubricate parts.
- Dismantle equipment and replace and repair defective parts.
- Reassemble the equipment and test it.
- Install new electrical equipment.
- Connect equipment to wiring system, attach switches, and make sure it is operating properly.
- Follow diagrams and instructions.
- May do minor carpentry work.

APTITUDES

- Be able to learn the processes of electrical installation and repair.
- Have average ability with words and numbers.
- Be able to handle a variety of work activities and do precise work accurately.
- Have good space and form perception and be able to see color differences.
- Have average physical coordination and hand and finger dexterity.
- Be able to make judgments based on data and observations.

WORK SETTING

Environment

Work indoors and outdoors; may have to work outdoors in all kinds of weather; may require travel to work sites.

Hours

Work 40 hours a week; may include evenings and weekends; longer hours may be necessary to make emergency repairs.

Employers

Manufacturing industries; transportation, communications, and public utility firms; wholesale and retail establishments; mining companies; and government agencies.

CONSIDERATIONS

- Work involves climbing, stooping, reaching, bending, and lifting medium loads weighing up to 50 pounds.
- Repairers risk electrical shocks.

- Some of these workers are members of labor unions.

NEBRASKA EMPLOYMENT

About 7,280 electrical and electronic repairers are projected to be employed by 1991.

WAGES

In Nebraska, the lowest hourly wage reported for electrical and electronic repairers is $7.85 per hour, the highest reported hourly wage is $15.22 per hour. The annual salary range for all electrical and electronic repairers in Nebraska is between $16,400 and $31,616 a year. The average hourly wage for all individuals employed in this occupation is $11.17 per hour with an annual salary of $21,216. Salaries will vary widely by geographic location as well as the amount of education or training completed plus experience. Nationally, salaries span a range of between $16,000 and $30,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Favorable
Factors
- The increased use of electrical equipment in business and industry and the introduction of complex electronic and electrical devices will increase job opportunities.

PREPARATION

SKILLS

- Knowledge of electricity and electronic equipment, its operation and use, and methods of installation and repair.
- Skills in diagnosis, analysis, and problem solving.
- Skills in interpreting manuals, diagrams, and blueprints.
- Skills in using the related tools and test equipment.

TRAINING

- For some workers the minimum educational requirement is high school graduation.
- Opportunities are best for those who receive formal training at technical or trade schools or community colleges.
- Other training opportunities include apprenticeship programs or on-the-job training.

EDUCATIONAL PROGRAM

292	Electrical and Electronics Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, algebra, construction, drafting, metal working, energy/power systems, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 830, 843-845, and 928.
Guide to Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 339.
Military Career Guide (1988-89 ed.), pp. 89, 92, 136, 139, 142, 143, 147, 150, and 151.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6154 DATA PROCESSING EQUIPMENT REPAIRERS

OCCUPATIONAL DESCRIPTION

Data processing equipment repairers maintain and repair computers and computer-related equipment. They may also help install the equipment.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Assembly Technicians (633.261-010)
Wirers (729.281-042)
Military Data Processing Equipment Repairers (M61540)

NCIS RELATED OCCUPATIONS

3711	Electrical and Electronic Engineering Technicians
6151	Communications Equipment Repairers
6152	Electric Motor Repairers
6153	Electrical and Electronic Repairers
6155	Home-Entertainment Equipment Repairers
6156	Household Appliance Repairers

WORK ACTIVITIES

- Clean and oil mechanical parts and check electronic equipment.
- Determine cause of break downs.
- Replace or repair faulty mechanical or electronic parts.
- Answer customers' questions.
- Give technical advice on ways to keep equipment in good condition.
- May install new equipment.

APTITUDES

- Be able to learn computer and computer-related equipment repair.
- Have above average verbal and numerical abilities.
- Be able to see slight differences in objects and to visualize objects from pictures and drawings.
- Have good use of hands and fingers.
- Be able to make decisions based on data.
- Be able to do precise work accurately.

WORK SETTING

Environment
    Work indoors; travel to customers' places of business.
Hours
    Work 40 hours a week; may be on call to make emergency repairs.
Employers
    Computer and electronics manufacturing and sales companies, computer maintenance companies, businesses with large computer installations, and federal government agencies.

CONSIDERATIONS

- Repairers usually work alone with little supervision.
- Job involves pressure to make immediate repairs because the time when a computer is not working can be costly.

NEBRASKA EMPLOYMENT

About 180 data processing equipment repairers are projected to be employed by 1991.

WAGES

In Nebraska the lowest reported hourly wage for data processing equipment repairers is $6.60 per hour, the highest reported hourly wage is $12.92 per hour. The annual salary range for all data processing equipment repairers in Nebraska is between $13,728 and $26,832. The average hourly wage in Nebraska for this occupation is $9.11 per hour with an annual salary of $18,930. Nationally, the annual salary range is between $15,900 and $40,500 a year. The highest salaries will be found in major metropolitan areas and paid to individuals who have completed an accredited training program through a community college or private vocational school.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Favorable

Factors

- Job opportunities will result from the growth of the computer industry.
- Newer equipment requires less maintenance and repair

PREPARATION

SKILLS

- Knowledge of digital electronics and elementary computer and circuitry theory.
- Knowledge of the use of specialized tools and testing equipment.
- Skills in problem solving.
- Skills in inventorying and ordering parts.
- Skills in keeping records.
- Skills in reading and understanding technical materials.
- Skills in dealing with a variety of customers.

TRAINING

- Most employers require at least two years of formal training at a community college, trade school, or four-year college.
- Some employers offer their own training programs.
- Repairers usually have to spend at least six months to two years in on-the-job training after receiving formal training.
- Training in some specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

292	Electrical & Electronics Equipment Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

Follow a college preparatory curriculum including courses in physics, advanced math, computer science, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 551 and 706.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 335.
Military Career Guide (1988-89 ed.) p 140

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6155 HOME-ENTERTAINMENT EQUIPMENT REPAIRERS

OCCUPATIONAL DESCRIPTION

Home-entertainment equipment repairers service televisions, radios, stereos, tape recorders, and other home electronic pro-ducts. Some specialize in repairing one kind of equipment while others repair several types. They use test equipment and hand tools such as pliers, soldering irons, and wire cutters.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Radio Repairers (720.281-010)
Tape-Recorder Repairers (720.281-014)
Television-and-Radio Repairers (720.281-018)
Electronic-Organ Technicians (828.261-010)

NCIS RELATED OCCUPATIONS

6151	Communications Equipment Repairers
6152	Electric Motor Repairers
6153	Electrical and Electronic Repairers
6154	Data Processing Equipment Repairers
6156	Household Appliance Repairers

WORK ACTIVITIES

- Install equipment in various locations.
- Show customers how to operate the unit and answer questions concerning service and maintenance.
- Analyze and test unit to determine cause of problem.
- Make necessary repairs including replacing defective parts, reconnecting wires, and cleaning components.
- Operate unit to make sure the problems have been corrected.
- Prepare itemized bills.

APTITUDES

- Be able to learn basic electronics and home-entertainment equipment repair techniques.
- Have average use of words and numbers.
- Be able to do precise work accurately.
- Have above average ability to see depths and distances and see important details.
- Be able to handle a variety of activities and make decisions based on tests and data.
- Have good physical coordination and hand and finger dexterity.

WORK SETTING

Environment
  Work indoors in repair shops and customers' homes; may travel to local work sites.
Hours
  Work 40 to 48 hours a week.
Employers
  Retail stores, repair shops, and self-employed.

CONSIDERATIONS

- Job requires precision movements, stooping, reaching, and lifting loads up to 50 pounds.
- Workers may be exposed to electrical shocks.

NEBRASKA EMPLOYMENT

About 450 home-entertainment equipment repairers are projected to be employed by 1991.

WAGES

In Nebraska the average annual salary range for all home-entertainment equipment repairers is between $13,850 and $16,000 a year. The higher salaries will go to individuals living in major metropolitan areas who have completed an accredited training program or an apprenticeship program. Nationally, salaries span a broader range between $14,560 and $29,100 a year.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Favorable
Factors
  - The growing popularity of home-entertainment equipment will increase the demand for these workers.

- New technology has decreased the need for maintenance work on this type of equipment which negatively affects the job outlook.
- Many openings will be the result of job turnovers.

PREPARATION

SKILLS

- Knowledge of basic electronics and home-entertainment repair.
- Skills in using related tools and testing equipment.
- Skills in reading and interpreting manuals and diagrams.
- Skills in estimating repair costs.
- Skill in using general sales and service calls procedures.
- Skills in listening.

TRAINING

- Many employers prefer to hire people who have completed a program in electronics or radio-television repair from a technical or vocational school or community college.
- Some employers provide on-the-job training that may last up to four years.
- Apprenticeship training programs are also available.

EDUCATIONAL PROGRAM

292	Electrical and Electronics Equipment Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, algebra, physics, shop, drafting, accounting, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 691-692 and 843.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 347.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6156 HOUSEHOLD APPLIANCE REPAIRERS

OCCUPATIONAL DESCRIPTION

Household appliance repairers install, service, and repair household appliances and power tools. They may repair small items such as bench tools, vacuum cleaners, and toasters or large items such as ranges, dryers, and air conditioners. The tools they use may include hand tools, power tools, and welding or soldering equipment.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Electrical-Appliance Repairers (723.381-010)
Vacuum Cleaner Repairer (723.381-014)
Electric-Tool Repairers (729.281-022)
Electrical-Appliance Servicers (827.261-010)
Domestic Air-Conditioning Installers (827.464-010)

NCIS RELATED OCCUPATIONS

6151	Communications Equipment Repairers
6152	Electric Motor Repairers
6153	Electrical and Electronic Repairers
6154	Data Processing Equipment Repairers
6155	Home-Entertainment Equipment Repairers
6174	Office Machine Repairers

WORK ACTIVITIES

- Test the operation of appliances using meters and observation.
- Repair or replace defective parts.
- Rebuild appliances.
- May return appliance to manufacturer service centers.
- Overhaul and sell used appliances.
- Assemble and install new appliances.
- Instruct customers in proper use and care of appliances.

APTITUDES

- Be able to learn the methods of installing, servicing, and repairing electrical appliances.
- Have average use of numbers and words.
- Be able to handle a variety of work activities and do precise work accurately.
- Have average space and form perception, physical coordination, and hand and finger dexterity.
- Be able to make decisions based on facts.

WORK SETTING

Environment
Work indoors; may be required to travel to customers' houses.

Hours
Work 40 hours a week; may include weekend work.

Employers
Appliance retail stores, service and repair shops, department stores, utility companies, appliance manufacturers and distributors, and self-employed.

CONSIDERATIONS

- Workers must be able to lift medium loads weighing up to 50 pounds, stoop, and reach and have good vision.
- Work is generally safe, but workers may be exposed to electrical shocks.

NEBRASKA EMPLOYMENT

About 530 household appliance repairers are projected to be employed by 1991.

WAGES

Wages for household appliance repairers will vary according to the type, size and location of the employer as well as the training and demonstrated skill of the worker. In Nebraska, hourly wages range from $5.00 to $7.20 per hour. The annual salary range for individuals working at least 40 hours per week is between $10,400 and $14,976 a year. Nationally, the salary range for all household appliance repairers is between $15,000 and $24,000 a year. Salaries at the upper end of the scale will be found in larger cities at major appliance manufacturers.

EMPLOYMENT GROWTH

Nebraska
Favorable

National

Somewhat Favorable

Factors

- There is an increasing demand for appliances, but the newer appliances require less maintenance.
- Most openings are to replace repairers who leave the occupation.

PREPARATION

SKILLS

- Knowledge of electrical appliances, appliance mechanisms, and methods of servicing and repair.
- Skills in problem solving and diagnosis.
- Skills in answering questions and dealing with customers.
- Skills in using tools of the trade.
- Skills in estimating materials and costs.

TRAINING

- High school graduation is the minimum educational requirement.
- Formal training is available at technical schools and community colleges.
- Some may learn their skills through on-the-job training or apprenticeship programs.
- Some large companies have formal training programs for trainees including home study courses and shop classes.

EDUCATIONAL PROGRAM

292	Electrical & Electronics Equipment Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects include courses in math, physics, shop, drafting, and electronics/electrical.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 695, 705, and 842.

Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.

Occupational Outlook Handbook (1990-91 ed.), p. 347.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6158 TELEPHONE INSTALLERS AND REPAIRERS

OCCUPATIONAL DESCRIPTION

Telephone installers and repairers install, service, and repair telephones, switchboards, and other communications systems. Usually, they travel to work sites in trucks equipped with telephone tools and supplies. They change phones and put in new customer equipment. When problems in phone service occur, they find the source of the problems and make repairs to restore service. Often they specialize in servicing a particular kind of phone equipment.

HOLLAND CODE

RCI (Realistic, Conventional, Investigative)

SPECIALTIES

Station Installer-and-Repairers (822.261-022)
Telephone Maintenance Mechanics (822.281-018)
Military Telephone Technicians (M61580)
Military Line Installers and Repairers (M61581)

NCIS RELATED OCCUPATIONS

4732	Telephone Operators
4755	Meter Readers
6151	Communications Equipment Repairers
6432	Electricians
6433	Electrical Power Installers and Repairers

WORK ACTIVITIES

- Install and connect telephone equipment in homes and businesses.
- Relocate existing phones and disconnect and remove phones and wires.
- Rout wires from buildings to terminal boxes.
- Climb poles or ladders to connect wires.
- Check to see equipment is operating properly.
- Install, wire, and test equipment in central offices of telephone companies.
- Locate and eliminate potential trouble spots.

APTITUDES

- Be able to learn the processes of telephone installation and repair.
- Have average ability with words and numbers.
- Be able to handle a variety of activities and do precise work accurately.
- Have average space and form perception, physical coordination, and finger and hand dexterity.
- Be able to visualize objects from drawings and blueprints and see slight differences in objects.
- Be able to work with people.

WORK SETTING

Environment
Work indoors in homes and businesses and outdoors in all kinds of weather.
Hours
Work 40 hours a week; may work extra hours during emergencies.
Employers
Telephone companies and manufacturers of communication equipment.

CONSIDERATIONS

- Workers must be able to reach, stoop, crawl under buildings, and climb poles.
- Most workers are members of a union.

NEBRASKA EMPLOYMENT

About 800 telephone installers and repairers (including station and cable TV) are projected to be employed by 1991.

WAGES

Wages for telephone installers and repairers will vary according to the size and location of the telephone company as well as the amount of training and experience that the worker brings to the position. In Nebraska, hourly wages range from a low of $6.60 per hour to a high of $10.50 per hour. The annual salary range for all telephone installers and repairers is between $13,728 and $21,840. The average hourly wage in Nebraska is $9.11 per hour with an annual salary of $18,930. Nationally, the average annual wage is $33,200.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Unfavorable

Factors

- Most openings are to replace people who leave the occupation and the turnover is low.
- Technological improvements are resulting in a reduced need for repair work.

PREPARATION

SKILLS

- Knowledge of basic electricity and techniques used to install and repair telephone equipment.
- Skills in reading and interpreting diagrams and work orders.
- Skills in problem solving.
- Skills in using hand tools and equipment and working at heights.
- Knowledge of safety practices and equipment.

TRAINING

- The minimum educational requirement is high school graduation.
- Most employers provide classroom instruction and on-the-job training.
- Other forms of training are available in technical schools and community colleges and apprenticeship programs.
- Most larger companies hire only experienced workers or hire from within the company; so, these are not entry-level positions.

EDUCATIONAL PROGRAM

292	Electrical & Electronics Equipment Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, algebra, geometry, physics, shop, construction, energy/power systems, metal working, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 834 and 835.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 358.

Military Career Guide (1988-89 ed.), pp. 144 and 152.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6160 HEATING, AIR-CONDITIONING, AND REFRIGERATION MECHANICS

OCCUPATIONAL DESCRIPTION

Heating, air-conditioning, and refrigeration mechanics install, maintain, and repair equipment used to heat and cool foods and to store foods, drugs, and other items that can spoil. They may specialize in installation or repair work or in servicing a particular type of equipment.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Environmental-Control-System Installer-Servicers (637.261-014)
Refrigeration Mechanics (637.261-026)
Air and Hydronic Balancing Technicians (637.261-034)
Refrigeration Unit Repairers (637.381-014)
Refrigeration Mechanics (827.361-014)
Hot Air Furnace Installer-and-Repairers (869.281-010)
Military Heating and Cooling Mechanics (M61600)

NCIS RELATED OCCUPATIONS

6432	Electricians
6450	Plumbers, Pipefitters, and Steamfitters
6824	Sheet Metal Workers

WORK ACTIVITIES

- Position motors, condenser units, and other components according to blueprints and designs.
- Assemble and connect refrigerant lines and wiring.
- Check for leakage of refrigerant or water.
- Adjust pumps, dehumidifiers, filters, controls, and other components.
- Perform maintenance functions.
- Determine causes of failures and make repairs.
- Use tools and equipment such as pipe cutters and benders, acetyline torches, gauges, ammeters, and electronic meters.

APTITUDES

- Be able to learn the details of refrigeration, heating, metal working, and electrical systems.
- Have average ability with words and numbers.
- Be able to do a variety of tasks and do precise work accurately.
- Have average eye-hand coordination and hand and finger dexterity.
- Be able to see slight differences in objects and to visualize objects from drawings and blueprints.
- Be able to make decisions based on facts and knowledge.

WORK SETTING

Environment
Work indoors and outdoors; travel to work sites frequently required.

Hours
Work 40 hours a week; evening and weekend work possible during emergencies or busy seasons of summer and winter.

Employers
Plumbing, heating, air conditioning, and electrical contractors; plumbing and heating equipment wholesalers; fuel dealers; utility companies; and self-employed.

CONSIDERATIONS

- Job hazards include electrical shock, torch burns, and injuries from handling heavy equipment.
- Mechanics may work at great heights when installing new equipment.

NEBRASKA EMPLOYMENT

About 1,670 heating, air-conditioning, and refrigeration mechanics are projected to be employed by 1991.

WAGES

Salaries for heating, air-conditioning and refrigeration mechanics will vary according to the size and geographic location of the business as well as the vocational training completed by the worker. In Nebraska, annual salaries will range

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between $13,728 and $16,016. For hourly employees the range in Nebraska is $6.60 to $7.70 per hour. Higher salaries will be found in larger cities utility companies. Nationally, salaries span a broad range of between $13,800 and $29,400 a year. Many heating, air-conditioning and refrigeration mechanics supplement their salaried income with independent contracting for services.

EMPLOYMENT GROWTH

Nebraska
 Somewhat Favorable
National
 Favorable
Factors

- Job opportunities are influenced by trends in construction.
- Most openings will result from replacement needs.
- Competition for entry-level positions may be keen.
- Prospects will be best for mechanics who are able to work on both heating and cooling systems.

PREPARATION

SKILLS

- Knowledge of details of refrigeration, heating, and electrical systems.
- Skills in sheet metal working and carpentry.
- Skills in reading and interpreting manuals, blueprints, and design specifications.
- Skills in problem solving.
- Knowledge of state and local building codes.

TRAINING

- The minimum educational requirement is high school graduation.
- Some employers prefer to hire workers who have formal training at a technical or trade school or community college.
- Other sources of job preparation are through on-the-job training or apprenticeship programs.

EDUCATIONAL PROGRAM

297	Heating, Air Conditioning, & Refrigeration Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, physics, construction, energy/power systems, drafting, electrical/electronics, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 554, 842, and 866.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 345.
Military Career Guide (1988-89 ed.), p. 132.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22512	Southeast Community College-Milford Campus
99827	Universal Technical Institute

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6171 PRECISION INSTRUMENT REPAIRERS

OCCUPATIONAL DESCRIPTION

Precision instrument repairers service, inspect, and install precision instruments and equipment such as cameras, watches, scales, meters, and special types of hand tools. They follow blueprints and diagrams to build, test, and adjust instruments.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Register Repairers (710.681-018)
Camera Repairers (714.281-014)
Photographic Equipment Technicians (714.281-022)
Watch Repairers (715.281-010)
Hearing-Aid Repairers (719.381-014)
Electric-Meter Repairers (729.281-014)
Military Precision Instrument Repairers (M61710)
Military Photographic Equipment Repairers (M61711)

NCIS RELATED OCCUPATIONS

6151	Communications Equipment Repairers
6172	Musical Instrument Repairers and Tuners
6822	Jewelers

WORK ACTIVITIES

- Follow blueprints and sketches.
- Inspect instruments for defects and test circuits.
- Take instruments apart and replace worn or damaged parts.
- Staighten, clean, and repaint parts.
- Make parts for precision instruments.
- Reassemble instruments and check for correct operations.

APTITUDES

- Be able to learn precision instruments, their operation, and methods of repairing them.
- Have average use of words and numbers.
- Be able to do a variety of work activities and do precise work accurately.
- Have good space and form perception and average physical coordination and hand and finger dexterity.
- Be able to notice small details and work within set standards.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week.
Employers
- Jewelry stores, camera shops, manufacturers, retail stores, utility companies, educational institutions, and self-employed.

CONSIDERATIONS

- Repairers often provide their own tools.
- This job involves sitting for long periods of time, concentrating on small parts, and seeing well.

NEBRASKA EMPLOYMENT

About 230 precision instrument repairers are projected to be employed by 1991.

WAGES

Salaries for precision instrument repairers will vary according to the type, size and location of the employer as well as the demonstrated skill of the worker. In Nebraska annual salaries will range between $10,000 and $15,000 a year. For individuals working less than a 40 hour week, hourly wages ranging between $4.90 and $7.50 are most common in Nebraska. Nationally, annual salaries span a wide range between $10,000 and $27,000 a year.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Somewhat Favorable
Factors
- Most job openings will result from replacement needs.

- Improved technology in precision instruments has lead to the need for fewer repairs and repairers.

PREPARATION

SKILLS

- Knowledge of precision instruments, their operation, and methods of repairing them.
- Skills in using tools and electronic testing equipment.
- Skills in diagnosis and problem solving.
- Skills in reading and interpreting manuals and blueprints.
- Knowledge of safety techniques.

TRAINING

- High school graduation is the minimum educational requirement.
- Some employers require training at a community college or technical or trade school.
- Skills may be learned through on-the-job training and apprenticeship programs.

EDUCATIONAL PROGRAM

292	Electrical & Electronics Equipment Repair
298	Precision Crafting and Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, chemistry, physics, drafting, shop, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 672, 679, 681, 691, and 705.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Military Career Guide (1988-89 ed.), pp. 146 and 148.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
11957	New York School of Locksmithing
22306	Northeast Community College
11952	Paris Junior College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
11920	University of Iowa
11921	University of Kansas
11925	Western Iowa Technical Community College
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6172 MUSICAL INSTRUMENT REPAIRERS AND TUNERS

OCCUPATIONAL DESCRIPTION

Musical instrument repairers and tuners clean, repair, and tune all kinds of musical instruments including pianos, harps, drums, and horns. Most specialize in one type of instrument. They use hand tools, tuning devices, and measuring instruments.

HOLLAND CODE

RSC (Realistic, Social, Conventional)

SPECIALTIES

Fretted-Instrument Repairers (730.281-026)
Piano Technicians (730.281-038)
Violin Repairers (730.281-050)
Wind-Instrument Repairers (730.281-054)
Piano Tuners (730.361-010)
Pipe-Organ Tuners and Repairers (730.361-014)
Percussion-Instrument Repairers (730.381-042)
Metal-Reed Tuners (730.381-034)

NCIS RELATED OCCUPATIONS

3230	Musicians and Composers
32301	Instrumental Musicians
6171	Precision Instrument Repairers
6173	Locksmiths

WORK ACTIVITIES

- Inspect and play instruments to determine defects.
- Take instruments apart and remove cracked and broken sections.
- Reshape and make replacement parts.
- Put instruments back together and play them and adjust the pitch.
- May clean and refinish instruments.

APTITUDES

- Be able to learn the methods of repairing, refinishing, and tuning pianos.
- Have average verbal abilities and good math abilities.
- Be able to handle a variety of work activities and to work independently.
- Have average space and form perception and physical coordination and good ability with hands and fingers.
- Be able to make decisions based on data and observations.
- Be able to do precise work accurately.

WORK SETTING

Environment
Work indoors; may travel to customers' homes or work sites to do repairs.

Hours
Work 35 to 40 hours a week, evening and weekent hours possible; part-time work frequently available.

Employers
Music stores; piano, organ, and musical instrument manufacturers; colleges and universities; concert musicians; and self-employed.

CONSIDERATIONS

- A person in this job should have some musical ability.
- Job requires medium lifting, stooping, reaching, and good hearing.

NEBRASKA EMPLOYMENT

About 40 musical instrument repairers and tuners are projected to be employed by 1991.

WAGES

Salaries for musical instrument repairers and tuners will vary according to the type of employment, the skill of the worker and economic conditions. The full time or part time status of the worker also affects salary figures for the state. Hourly wages for workers working independently or on a part-time basis range between $5.20 and $10.20 an hour. In Nebraska, annual salaries for full time workers range between $10,816 and $21,216 a year. Many workers in this occupation supplement their incomes as working musicians. Nationally, salaries span an equally broad range of between $8,000 and $40,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors

- Most job openings will result from replacement needs for those leaving the occupation, and those will be few because it is such a small occupation.
- This occupation is sensitive to downturns in the economy because tuning and repair of musical instruments is a luxury.
- Opportunities are best for those with work experience or vocational training.

PREPARATION

SKILLS

- Knowledge of the basic principles of musical instrument construction and repair.
- Skills in using precision tools of the trade.
- Skills in telling differences between musical tones.
- Skills in relating to people and communicating with them.
- Skills in recordkeeping.

TRAINING

- High school graduation is the minimum educational requirement.
- Formal training programs in instrument repair is available at technical schools and community and four-year colleges.
- Training through home-study courses, apprenticeship programs, and on-the-job training is available.

EDUCATIONAL PROGRAM

298	Precision Crafting and Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in physics, music, shop, industrial arts, accounting, drafting, and wood working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 709-711.

Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.

Occupational Outlook Handbook (1990-91 ed.), p. 357.

SCHOOLS

11957	New York School of Locksmithing
11952	Paris Junior College
11920	University of Iowa
11921	University of Kansas
11925	Western Iowa Technical Community College

6173 LOCKSMITHS

OCCUPATIONAL DESCRIPTION

Locksmiths repair, open, install, and replace locks. Their duties include changing combinations and making duplicates of keys and replacements for lost keys. They open locks and safes for people who have locked themselves out. Some may repair safes and install and repair security systems. DOT 709.281-010

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Safe-and-Vault Service Mechanics (869.381-022)

NCIS RELATED OCCUPATIONS

6172	Musical Instrument Repairers and Tuners
6822	Jewelers

WORK ACTIVITIES

- Determine type of lock needed, cut or drill the opening, and fit lock in place.
- Make final adjustments to bank vaults and security systems to ensure they work properly.
- Take apart locks, locate defects, clean and adjust mechanisms, and replace parts.
- Reassemble locks and check their operation.
- Open locks.
- Make duplicate keys.
- Make new master keys, reset combinations, and rekey door locks.

APTITUDES

- Be able to learn locksmithing procedures.
- Have average ability to use numbers and words.
- Be able to make decisions based on data.
- Have good space and form perception physical coordination, and hand and finger dexterity.
- Be able to do precise work accurately.
- Be able to see details in objects.

WORK SETTING

Environment

Work mainly indoors, may have to travel to work sites.

Hours

Work 40 hours a week; may be on call evenings and weekends; self employed locksmiths usually work longer hours; part-time work is sometimes available.

Employers

Locksmith shops, hardware and department stores, large industrial plants, educational institutions, government agencies, and self-employed.

CONSIDERATIONS

- Workers may be required to stoop, reach, and do light lifting.
- Locksmiths may need to be bondable.

NEBRASKA EMPLOYMENT

About 50 locksmiths are projected to be employed by 1991.

WAGES

Salaries for registered locksmiths who have completed either on the job or apprenticeship training will vary according to the type, size and location of employer as well as the full or part-time status of the worker. In Nebraska, hourly wages for individuals working less than full time range between $7.00 and $8.90 per hour. The hourly rate may increase after certain hours for emergency lock-out service. Individuals working full time may expect a salary range between $14,560 and $18,512 a year. Nationally, the average salary range is somewhat lower than Nebraska at $9,000 to $11,000 a year.

EMPLOYMENT GROWTH

Nebraska

Favorable

National

Somewhat Favorable

Factors

- Most openings are to replace workers who leave the occupation.
- Greater public concern for security and the trend toward the use of electronic security devices may result in some new job openings.

PREPARATION

SKILLS

- Knowledge of locks, security systems, and safes and their repair procedures.
- Skills in using the hand tools and equipment of the trade.
- Knowledge of electricity and electrical components.
- Skills in operating cutting and welding equipment.
- Skills in reading manuals and catalogs.

TRAINING

- The minimum educational requirement is usually high school graduation.
- Training is usually provided on the job.
- Correspondence courses and formal training programs in locksmithing are available.
- Some locksmiths prepare through apprenticeship programs.

EDUCATIONAL PROGRAM

298	Precision Crafting and Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, physics, drafting, electrical/electronics, metal working, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 663-664 and 867.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.

SCHOOLS

11957	New York School of Locksmithing
11952	Paris Junior College
11920	University of Iowa
11921	University of Kansas
11925	Western Iowa Technical Community College

6174 OFFICE MACHINE REPAIRERS

OCCUPATIONAL DESCRIPTION

Office machine workers install, service, and repair office machines such as type-writers, adding machines, cash registers, and copiers. They make regular visits to offices and businesses in an assigned area to service customers machines, and they handle emergency breakdowns. Many specialize in one type of machine.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Mail-Processing-Equipment Mechanics (633.261-014)
Cash-Register Servicers (633.281-010)
Office-Machine Servicers (633.281-018)
Typewriter Repairers (706.381-030)
Military Office Machine Repairers (M61740)

NCIS RELATED OCCUPATIONS

6156 Household Appliance Repairers

WORK ACTIVITIES

- Install office machines, make adjustments to insure proper performance, instruct customers on operation and care of machine.
- Inspect and service machines periodically.
- Keep records showing servicing dates and repairs made.
- Determine cause of operating problem and make necessary repairs.
- Rebuild machines.
- Prepare cost estimates.
- Fill out service report forms.
- Place orders for replacement parts.

APTITUDES

- Be able to learn the operation and method of repair of office machines.
- Have average ability with words and numbers.
- Be able to visualize objects from pictures and drawings and to see slight differences in objects.
- Have average eye-hand coordination and finger dexterity.
- Be able to do precise work accurately.
- Be able to make decisions based on facts.

WORK SETTING

Environment
    Work indoors in repair shops and customers' offices. Travel in service area is usually required.
Hours
    Work 40 hours a week.
Employers
    Businesses that sell and service office equipment, office machine manufacturers, independent repair shops, large businesses, and educational institutions.

CONSIDERATIONS

- Continual study may be needed to keep up-to-date on new developments and machines.
- Workers may need to be bonded.
- Jobs may require bending, kneeling, reaching, and lifting objects weighing 125 pounds.

NEBRASKA EMPLOYMENT

About 350 office-machine repairers are projected to be employed by 1991.

WAGES

Entry level salaries for office machine repairers vary only slightly according to the training, experience and demonstrated skill of the worker. In Nebraska, annual salaries range between $12,480 and $13,104. Nationally, salaries span an extremely broad range between $15,900 and $40,500 a year. The higher salaries will be found in major metropolitan areas in large businesses.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Favorable
Factors
- Demand is increasing for these workers because businesses are buying more office machines to handle the growing amount of paperwork.

- Prospects are most favorable for those with electronics training.

PREPARATION

SKILLS

- Knowledge of the operation and repair of office machines.
- Knowledge of electronics and electricity.
- Skills in problem solving and diagnosis.
- Skills in reading and interpreting service manuals.
- Skills in writing cost estimates.
- Skills in using tools and equipment of the trade.

TRAINING

- The minimum educational requirement is high school graduation.
- Most employers prefer repairers who have had formal training at a technical school or community college.
- Repairers may also learn their skills through apprenticeship programs or on-the-job training.

EDUCATIONAL PROGRAM

292	Electrical & Electronics Equipment Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, physics, shop, marketing, office education, drafting, data processing, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 553 and 660.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 335.
Military Career Guide (1988-89 ed.), p. 135.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6176 ELEVATOR INSTALLERS AND REPAIRERS

OCCUPATIONAL DESCRIPTION

Elevator installers and repairers install, repair, and service elevators, escalators, and similar equipment. They install this equipment during construction and replace and repair equipment already in place in buildings. DOT 825.281-030

HOLLAND CODE

RIS (Realistic, Investigative, Social)

SPECIALTIES

Elevator Constructors (825.361-010)

NCIS RELATED OCCUPATIONS

6432	Electricians
6473	Structural Metal Workers

WORK ACTIVITIES

- Install new hoist ropes and motor bearings, replace break linings, and place new controls, switches, and other devices to keep elevators in good repair.
- Inspect elevator equipment according to set maintenance schedule.
- Lubricate moving parts.
- Prepare shaft by building still framework and pouring concrete.
- Install electric circuitry.
- Place elevator car and cables.

APTITUDES

- Be able to learn the methods of elevator construction and repair.
- Have average verbal and math abilities.
- Be able to make decisions based on facts.
- Have good space and form perception and hand and finger dexterity.
- Be able to work with exact measurements and set standards.
- Be able to do a variety of tasks.

WORK SETTING

Environment
  Work indoors

Hours
  Work 40 hours a week; may be on call and work overtime for emergencies.

Employers
  Elevator manufacturers, elevator contractors and repair businesses, and government agencies.

CONSIDERATIONS

- Elevator repairers and installers are responsible for the safety of people who ride the elevators; mistakes could cost people their lives.
- There are hazards involved in elevator repair work because much work takes place at great heights with heavy equipment.
- Many of these workers belong to a union.

NEBRASKA EMPLOYMENT

About 30 elevator installers and repairers are projected to be employed by 1991.

WAGES

Salaries for elevator installers and repairers will vary according to the amount of training completed by the worker as well as geographic location. In Nebraska, annual salaries range between $15,392 and $20,592. The highest salaries will be found in larger cities where more high-rise structures will be found. Nationally, wages range from $17,160 to $39,000 annually.

EMPLOYMENT GROWTH

Nebraska
  Favorable

National
  Somewhat Favorable

Factors

- The total number of job openings will be limited because this is a small occupation with few turnovers.
- Growth in the number of high-rise apartment and commercial buildings may create the need for more workers in this field.

PREPARATION

SKILLS

- Knowledge of elevator construction and repair methods.
- Knowledge of electricity, electronics, and hydraulics.
- Skills in using the tools and instruments of the trade.
- Skills in carpentry, wiring, iron working, and welding.
- Skills in reading blueprints.
- Knowledge of government and safety regulations concerning elevator installation and repair.

TRAINING

- High school graduation is the minimum educational requirement.
- Most elevator installers and repairers learn their skills through on-the-job training including some classroom instruction.
- Formal training in electricity and electronics in technical schools or community college is helpful.
- Apprenticeship programs are available in some areas.

EDUCATIONAL PROGRAM

292	Electrical & Electronics Equipment Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in math, physics, construction, drafting, shop, metal working, electrical/electronics, and computer science.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 839.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 341.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6178 MILLWRIGHTS

OCCUPATIONAL DESCRIPTION

Millwrights install, repair, and maintain industrial machinery. They set up and test equipment and keep it in running order. They work from blueprints and use all types of building materials and tools. They may do a variety of installation work or specialize in certain types of machinery.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Automated Equipment Engineer-Technicians (638.261-010)
Machinery Erectors (638.261-014)
Manufacturer's Service Representatives (638.261-018)
Maintenance Mechanics (638.281-014)
Millwrights (638.281-018)
Machine Assemblers (638.361-010)
Field Service Technicians (638.261-026)

NCIS RELATED OCCUPATIONS

6117 Heavy Equipment Mechanics

WORK ACTIVITIES

- Read blueprints and drawings to determine work procedures.
- Prepare concrete platforms on which heavy machines are to be mounted.
- Unload and install new equipment and machinery.
- Align and level machinery.
- Lubricate machinery; replace worn belts, pulleys, and bearings; and weld broken parts.
- Work as part of a maintenance team.
- Install walkways, platforms, scaffolds, and ladders.

APTITUDES

- Be able to learn to take apart, move, assemble, and repair large equipment.
- Have average use of words and numbers.
- Be able to make decisions based on data.
- Have good space and form perception, general coordination, and hand and finger dexterity.
- Be able to do precise work.
- Be able to do a variety of tasks.

WORK SETTING

Environment
Work mostly indoors with some possible outdoor work; may travel long distances to work sites.
Hours
Work 40 hours a week; longer hours may be required to complete a job.
Employers
Manufacturers, machinery and equipment wholesalers, construction companies, and public utilities.

CONSIDERATIONS

- Work requires lifting of heavy loads, stooping, and reaching.
- Job involves the hazards of falling from high places, being injured by moving or falling objects, and being cut from handling sharp metal objects.
- Most millwrights are members of labor unions.

NEBRASKA EMPLOYMENT

About 300 millwrights are projected to be employed by 1991.

WAGES

Salaries for millwrights will vary according to the size and geographic location of the employer as well as the completed training and experience of the worker. Individuals promoted to this position may expect a salary range between $16,300 and $27,000 a year. Nationally, salaries will range between $16,000 and $40,000 a year.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Somewhat Favorable
Factors
- A slowdown in the growth of manufacturing due to foreign competition should weaken demand for millwrights.
- Downturns in the economy will decrease demand also.
- Millwrights will be needed to automate and modernize plants.

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PREPARATION

SKILLS

- Knowledge of how industrial equipment works and have to assemble, disassemble, and repair it.
- Skills in construction, welding, rigging, and scaffolding.
- Skills in reading blueprints.
- Skills in using tools and instruments of a trade.
- Knowledge of electricity.
- Skills in keeping records.

TRAINING

- This is not an entry-level position; usually openings are filled by employees in a firm through a bid system based on seniority and experience.
- Millwrights usually learn their job through informal on-the-job and formal apprenticeship training.
- In some cases, technical schools may reduce the amount of on-the-job training required.

EDUCATIONAL PROGRAM

287	Industrial Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, algebra, geometry, physics, manufacturing, shop, construction, energy/power systems, drafting, metal working, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 556-557.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 352.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21311	Kearney State College (Kearney)
22803	Metropolitan Community College
22304	Mid-Plains Community College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha
22214	Western Nebraska Community College-Sidney Campus

6179 BUILDING MAINTENANCE REPAIRERS

OCCUPATIONAL DESCRIPTION

Building maintenance workers repair and maintain the plumbing, electrical fixtures, machinery, and structure of commercial and public buildings. They determine the cause of the problem and do necessary repairs using plumbers, electrician's, or carpenter's tools. Also, they may assemble and install new equipment and perform preventative maintenance. DOT 899.381-010

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Military Ordnance Mechanics (M61790)
Military Divers (M61791)

NCIS RELATED OCCUPATIONS

5244	Janitors and Cleaners
6422	Carpenters
6432	Electricians
6450	Plumbers and Pipe Fitters

WORK ACTIVITIES

- Replace electrical switches and other fixtures.
- Repair woodwork and paint structures.
- Lay brick and repair plaster.
- Repair plumbing and fixtures.
- Build sheds and other outside buildings.

APTITUDES

- Be able to learn the procedures of building maintenance and repair.
- Have average use of words and numbers.
- Be able to picture objects from blueprints and drawings and to see slight differences in objects.
- Have good physical coordination and hand and finger dexteritv
- Be able to do a variety of activities in the limited time and to follow procedures accurately

WORK SETTING

Environment

Work indoors and outdoors; may have to work outside in all kinds of weather.

Hours

Work 40 to 48 hours a week; longer work hours possible.

Employers

Manufacturers, real estate firms, government agencies, educational institutions, hospitals, nursing homes, hotels and motels, retail stores, and apartment and condominium complexes.

CONSIDERATIONS

- Job requires climbing, stooping, reaching, and lifting medium loads.

NEBRASKA EMPLOYMENT

About 410 building maintenance repairers are projected to be employed by 1991.

WAGES

Wages for building maintenance repairers vary widely according to the size of the facility and the skills and experience of the worker. In Nebraska, hourly wages for building maintenance repairers range from a reported low of $4.00 to a maximum high of $12.50. The median hourly wage for all workers in this occupation is $8.11. The annual salary range for full time workers is between $9,630 and $25,854 a year. The median annual salary for all workers is $16,869. Nationally, salaries span a range of $12,000 to $27,000 a year.

EMPLOYMENT GROWTH

Nebraska

Favorable

National

Favorable

Factors

- This occupation has a high turnover rate.
- Applicants with a variety of skills including carpentry, welding, and electrical skills will find the best opportunities.

PREPARATION

SKILLS

- Knowledge of building maintenance and repair procedures.
- Skills in using a wide variety of hand and power tools.
- Knowledge of the fundamentals of plumbing, wiring, and carpentry.
- Skills in reading manuals and blueprints.
- Skills in following work orders.

TRAINING

- The minimum educational requirement is high school graduation.
- Advanced training is available at technical schools and community colleges and through apprenticeship programs.
- Most employers provide on-the-job training.

EDUCATIONAL PROGRAM

288	Construction Trades
292	Electrical and Electronics Repair
398	Custodial and Housekeeping Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, science, math, construction, shop, small engines, drafting, wood working, metal working, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 874.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 362.
Military Career Guide (1988-89 ed.), pp. 130 and 145.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
21821	University of Nebarska at Omaha
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6412 BRICKMASONS

OCCUPATIONAL DESCRIPTION

Brickmasons lay bricks and concrete and set cinder blocks and similar materials to build and repair structures. They work on commercial and industrial construction projects as well as private housing. Masonry materials used may include bricks, cinder, glass, gypsum, or concrete blocks; cut or field stone; structural and facing tile; and terra cotta and ceramic veneer. DOT 861.381-018

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Firebrick and Refractory Tile Bricklayers (861.381-026)
Chimney Repairers (899.364-010)
Military Bricklayers and Concrete Masons (M64120)

NCIS RELATED OCCUPATIONS

6444	Plasterers
6463	Concrete Finishers

WORK ACTIVITIES

- Measure and lay out guidelines for setting masonry in straight lines.
- Mix mortar and spread a layer on side of masonry.
- Place masonry pieces in place and check alignments.
- Remove excess mortar.
- Cut and fit masonry pieces.
- Clean bricks on blocks.
- May set up and take down scaffolding.
- May carry tools, supplies, and equipment to and from the job site.

APTITUDES

- Be able to learn the methods, materials, and tools used in bricklaying.
- Have average use of words and numbers.
- Be able to visualize objects from drawings and to see slight differences in objects.
- Have good space and form perception and average eye-hand coordination and finger dexterity.
- Be able to make decisions based on facts and do precise work accurately.

WORK SETTING

Environment
 Work indoors and outdoors.
Hours
 Work 40 to 50 hours a week; longer hours may be worked during spring, summer, and fall months; may be layoffs in the winter.
Employers
 Construction contractors and self-employed.

CONSIDERATIONS

- Bricklayers stoop, lift, reach, and bend for long periods of time.
- Good balance is necessary.
- Hazards include such things as falling and being struck by falling materials.
- Bricklayers usually provide their own hand tools.
- Some workers belong to labor unions.

NEBRASKA EMPLOYMENT

About 770 brickmasons are projected to be employed by 1991.

WAGES

Salaries for brickmasons will vary according to the demonstrated skill of the worker, union affiliation and economic conditions which directly impact construction. In Nebraska, annual salaries for brickmasons range between $20,000 and $27,000 a year. Nationally, salaries vary with a range of $12,000 to $39,000 a year.

EMPLOYMENT GROWTH

Nebraska
 Unfavorable
National
 Favorable
Factors
- The outlook depends on the level of residential and commercial construction.
- Employment of brickmasons is sensitive to swings in the economy.

PREPARATION

SKILLS

- Knowledge of the methods, materials, and tools used in bricklaying.
- Knowledge of building rules and regulations, safety, and first aid.
- Skills in reading blueprints and specifications.
- Skills in making measurements.

TRAINING

- Most bricklayers learn their skills through on-the-job training or apprenticeship programs.
- High school graduation is necessary to enter most apprenticeship programs.
- Formal training in bricklaying or construction trades may be helpful.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, construction, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 858 and 874.

Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.

Occupational Outlook Handbook (1990-91 ed.), p. 362.

Military Career Guide (1988-89 ed.), p. 156.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6422 CARPENTERS

OCCUPATIONAL DESCRIPTION

Carpenters build, install, repair, and maintain all kinds of wooden structures. Other materials they work with may include fiberglass and plastics. The duties of carpenters very greatly. They may build frameworks, scaffolds, and wooden forms; erect docks and bridges; install cabinets and paneling; and put up tile. They use measuring tools, power tools, and a variety of hand tools. DOT 860.381-022

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Maintenance Carpenters (860.281-010)
Rough Carpenters (860.381-042)
Form Builders (860.381-046)
Carpenters I (860.664-010)
Carpenters II (860.681-010)
House Repairers (869.381-010)
Subassembly Assemblers (869.684-018)
Lay-Out Workers (869.684-034)
Roof Assemblers I (869.684-042)
Trimmers (869.684-066)
Custom Van Installers (860.381-074)
Military Carpenters (M64220)

NCIS RELATED OCCUPATIONS

1472	Construction Inspectors
6179	Building Maintenance Employers
6424	Drywall Installers
6442	Painters
6444	Plasterers
6465	Insulation Workers
6468	Roofers
6479	Construction Workers
6832	Cabinet Makers

WORK ACTIVITIES

- Work from detailed plans, rough drawings, and verbal and written instructions.
- Measure and cut materials.
- Fit the pieces together and secure them in place.
- Use levels, squares, rules, mitre boxes, saws, hammers, planes, chisels, drills, routers, and sanders.
- Erect scaffolding and temporary sheds.
- Install doors and windows.
- Repair or replace broken or rotten pieces, refinish sections, remodel structures, and construct additions.
- Estimate costs of the work, purchase supplies and equipment, and keep business records.

APTITUDES

- Be able to learn the materials and cutting and assembling methods necessary in carpentry.
- Have average ability with numbers and words.
- Be able to do a variety of tasks and work according to set standards.
- Have average space and form perception and physical and eye-hand coordination.
- Be able to visualize objects from drawings, pictures, and blueprints.
- Be able to work rapidly and accurately and make decisions based on facts.

WORK SETTING

Environment

Work indoors and outdoors.

Hours

Work 40 to 50 hours a week usually; hours are longer during warm seasons and shorter hours or layoffs are possible during winter months.

Employers

Building contractors, large manufacturers, government agencies, utility companies, and self-employed.

CONSIDERATIONS

- Work areas may be dusty, muddy, and noisy.
- Job involves long hours of standing, climbing, and squatting.
- Carpenters risk injuries from falls, sharp tools, and power equipment.
- Some carpenters belong to unions.

NEBRASKA EMPLOYMENT

About 3,550 carpenters are projected to be employed by 1991.

WAGES

Salaries for journey level carpenters will vary according to the size and location of the employer, the demonstrated skill and union affiliation of the worker. In Nebraska, hourly wages range from a low of $8.99 to a high of $12.54. Workers employed full time may expect a yearly salary range between $18,700 and $26,100 a year. The average yearly income for all carpenters in Nebraska is $22,300 a year. Nationally, the annual salary range for all carpenters is between $11,180 and $35,152 a year.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Favorable
Factors

- The outlook depends on the amount of commercial and residential construction.
- Replacement needs are high because of the large number of people employed in this occupation.
- This occupation is affected by downturns in the economy.

PREPARATION

SKILLS

- Knowledge of the work methods necessary in carpentry.
- Knowledge of safety practices and building regulations.
- Knowledge of the use and care of tools and materials of the trade.
- Skills in blueprint reading and using layout techniques.
- Skills in estimating costs and keeping records.

TRAINING

- Some employers require applicants who have a high school diploma and then provide on-the-job training.
- Other employers require applicants who have previous training or work experience.
- Training is available at technical schools or community colleges and apprenticeship programs.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, construction, industrial arts, accounting, drafting, and wood working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 856.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 363.
Military Career Guide (1988-89 ed.), p. 158.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6424 DRYWALL INSTALLERS

OCCUPATIONAL DESCRIPTION

Drywall installers put up and finish drywall panels. Drywall consists of a thin wall of plaster between two pieces of heavy paper. Some drywall installers build metal or wooden frameworks and attach laths to them so drywall or paster can be applied. Also, they may fill joints between drywall sheets and prepare walls for painting.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Lathers (842.361-010)
Drywall Applicators (842.381-010)
Tapers (842.664.010)
Sheetrock Applicators (869.684.050)

NCIS RELATED OCCUPATIONS

6422	Carpenters
6442	Painters
6443	Paperhangers
6444	Plasterers

WORK ACTIVITIES

- Read blueprints to decide methods of installation, work procedures, and material and tool requirements.
- Mark reference lines and points.
- Measure and cut materials.
- Fit and fasten boards into position.
- Cut openings into board for outlets, vents, or fixtures.
- Measure, cut, and install framing for windows, doors, and vents.
- May install laths to provide a base for plaster, fireproofing, or acoustical materials.
- May seal joints and prepare wall surfaces for painting or papering.

APTITUDES

- Be able to learn the tools, materials, and processes of hanging drywall, lathing, and sealing joints.
- Have average use of words and numbers.
- Be able to make decisions based on facts and work according to set standards.
- Have average physical coordination and hand and finger dexterity.
- Be able to see slight differences in objects and have average space and form perception.

WORK SETTING

Environment
Work indoors; may have to travel to job sites.
Hours
Work 40 or more hours a week; longer hours possible during peak construction periods; work may be seasonal with layoffs during the winter.
Employers
Construction contractors, drywalling firms, or self-employed.

CONSIDERATIONS

- Job requires standing, stooping, bending, reaching overhead, and lifting loads weighing 100 pounds or more.
- Work may be hazardous when working with cutting tools or on ladders.

NEBRASKA EMPLOYMENT

About 250 drywall installers are projected to be employed by 1991.

WAGES

In Nebraska, salaries for drywall installers will vary according to the size of the contracting firm, demonstrated skill of the worker and economic conditions effecting the construction industry. Annual salaries range between $16,500 and $20,850 a year. Nationally, salaries range between $15,000 and $29,000 a year.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Favorable
Factors
- The outlook depends mainly on the amount of commercial and residential construction.

- Drywall installers are affected less by bad weather than other construction workers because they work indoors.

PREPARATION

SKILLS

- Knowledge of the tools, materials, and processes of hanging drywall, lathing, and sealing joints.
- Knowledge of building codes and regulations and safety practices.
- Skills in reading blueprints.
- Skills in measuring and computing.

TRAINING

- High school graduation is preferred but not required.
- Workers learn either on the job under the supervision of an experienced worker or through an apprenticeship program.
- Training in carpentry at technical schools or community colleges may be helpful.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, construction, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 847 and 870.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 367.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6432 ELECTRICIANS

OCCUPATIONAL DESCRIPTION

Electricians install and maintain electrical wiring and equipment. They follow blue-prints and building plans to connect wiring and install and test switches, relays, and circuit breakers. DOT 824.261-010

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Military Building Electricians (M64320)

NCIS RELATED OCCUPATIONS

6152	Electric Motor Repairers
6153	Electrical and Electronic Repairers
6158	Telephone Installers and Repairers
6160	Heating, Air-Conditioning, and Refrigeration Mechanics
6176	Elevator Installers and Repairers
6179	Building Maintenance Repairers
6433	Electrical Power Installers and Repairers

WORK ACTIVITIES

- Read diagrams or blueprints and plan electrical installations.
- Measure, cut, and install electrical tubing.
- Pull wire through tubing, splice, twist, and solder wires, and apply tape.
- Connect wiring to fixtures and equipment.
- Install and check control mechanisms.
- Connect power cable to equipment.
- Observe and test installed wiring and equipment to ensure safety standards and codes are met.
- Prepare cost estimates, order materials, and keep records.

APTITUDES

- Be able to learn to do electrical installation and repair.
- Have above average use of numbers and average use of words.
- Be able to do a variety of tasks in a limited time and work within set standards.
- Have average eye-hand coordination and hand and finger dexterity.
- Be able to see distances, shapes, and dimensional forms.
- Be able to make decisions based on data and experience.
- Be able to tell color differences.

WORK SETTING

Environment

Work indoors and outdoors; may be required to travel long distances to work sites.

Hours

Work 40 hours a week; may work longer hours during the peak of construction season.

Employers

Electrical contractors, manufacturers, utility companies, government agencies, general contractors, and self-employed.

CONSIDERATIONS

- Job requires climbing, stooping, reaching, bending, lifting medium loads weighing up to 50 pounds, and working in awkward positions and cramped quarters.
- Hazards to electricians include electrical shocks and falls from ladders and scaffolds.
- Many electricians are members of labor unions.

NEBRASKA EMPLOYMENT

About 3,590 electricians are projected to be employed by 1991.

WAGES

Salaries for journey level licensed electricians range between $8.99 and $12.54 per hour. The annual salary range is between $18,700 and $26,100 a year. The highest salaries will be found in major metropolitan areas. The average annual salary for all electricians in Nebraska is $22,350. Nationally, salaries span a broad range between $13,000 and $38,000 a year.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National

Somewhat Favorable

Factors

- Outlook depends on construction activity.

- This is a large occupation, but the turnover rate is low.
- Competition for many positions is keen.

PREPARATION

SKILLS

- Knowledge of electricity and electrical wiring procedures.
- Knowledge of safety procedures and building costs.
- Skills in reading blueprints and specifications.
- Skills in estimating costs and keeping records.

LICENSING OR CERTIFICATION

- Electricians must be certified by the Nebraska Electrical Board.
- To be licensed a class A contractor must be a graduate of an accredited four-year college plus have one year of experience as a licensed journeyman or have five years experience in layout, supervision, and installation. Class B contractors must have at least three years of acceptable experience.

TRAINING

- Electricians usually learn their trade through apprenticeship programs.
- Electrical skills also can be learned through on-the-job training or through formal programs at technical schools or community colleges.

EDUCATIONAL PROGRAM

288	Construction Trades
292	Electrical & Electronics Equipment Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, physics, construction, energy/power systems, industrial arts, drafting, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 823.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 369.
Military Career Guide (1988-89 ed.), p. 157.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6433 ELECTRICAL POWER INSTALLERS AND REPAIRERS

OCCUPATIONAL DESCRIPTION

Electrical power installers and repairers construct, repair, and service power lines including cables and lines for television antennas, street lights, and traffic signals. They may work on underground cable systems or on overhead cables or lines. They follow blueprints and use electricians' hand tools and testing devices.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Line Maintainers (821.261-014)
Trouble Shooters II (821.261-026)
Cable Installer-Repairers (821.361-010)
Line Erectors (821.361-018)
Line Repairers (821.361-026)

NCIS RELATED OCCUPATIONS

6151	Communications Equipment Repairers
6152	Electric Motor Repairers
6153	Electrical and Electronic Repairers
6158	Telephone Installers and Repairers
6432	Electricians

WORK ACTIVITIES

- Assemble or repair poles and towers.
- Climb poles or work underground to install transmission cables.
- Attach wires and install pole hardware.
- Splice, solder, and insulate conductors.
- Trim trees and brush around lines.
- Install transformers, circuit breakers, and switches.

APTITUDES

- Be able to learn the processes used in repairing and installing electrical lines and equipment.
- Have average use of words and numbers.
- Be able to tell differences between colors.
- Have good physical and eye-hand coordination, hand and finger dexterity, and sense of balance.
- Be able to handle a variety of jobs and work well under stress.
- Be able to make decisions based on data and to do precise work accurately.
- Be able to work at heights.

WORK SETTING

Environment
    Work mostly outdoors; may work outdoors during storms that cause power outages; May travel long distances to work sites.
Hours
    Work 40 hours a week; may work longer hours during emergencies.
Employers
    Utility companies, telephone companies, cable television firms, and construction companies.

CONSIDERATIONS

- This job involves lifting of loads weighing up to 100 pounds, climbing utility poles, stooping, and reaching.
- Workers may be exposed to hazards such as electrical shocks or falling from heights.

NEBRASKA EMPLOYMENT

About 3,700 electrical power installers and repairers are projected to be employed by 1991.

WAGES

In Nebraska, wages for electrical power installers and repairers vary widely according to geographic location as well as the technical skill and experience of the worker. Hourly rates range between $7.85 and $15.22. Yearly salaries range between $16,300 and $31,824. The average yearly salary for all electrical power installers and repairers is $23,000. Nationally, annual salaries range between $15,600 and $37,500.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Somewhat Favorable

Factors

- Technological improvements and changing business practices have reduced the number of workers needed.
- Most job opportunities will result from replacement needs.

PREPARATION

SKILLS

- Knowledge of the principles of electricity and the processes used in installing and maintaining electrical lines and equipment.
- Knowledge of safety procedures.
- Skills in reading blueprints and manuals.
- Skills in trimming trees and bushes.

TRAINING

- Most employers prefer to hire high school graduates.
- Some employers provide on-the-job training programs which may last up to four years.
- Technical skills also may be learned through apprenticeship programs.

EDUCATIONAL PROGRAM

292	Electrical & Electronic Equipment Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, physical science, energy/power systems, physics, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 831-832.

Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.

Occupational Outlook Handbook (1990-91 ed.), p. 350.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6442 PAINTERS

OCCUPATIONAL DESCRIPTION

Painters put paint, varnish, and other finishes on surfaces of buildings or equipment. They prepare surfaces and apply undercoatings and finish coats. Painters may mix and match colors. Tools include brushes, rollers, and spray guns. DOT 840.381-010

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Glass Tinters (840.684-010)

NCIS RELATED OCCUPATIONS

6422	Carpenters
6424	Drywall Installers
6443	Paperhangers
6444	Plasterers
7669	Painting Machine Operators

WORK ACTIVITIES

- Determine the type and color of paint or coating to use.
- Prepare woodwork and wall surfaces.
- Remove old paint and fill holes, cracks, and joints.
- Mask off areas not to be painted.
- Cover surface with primer or sealer.
- Paint or stain surfaces.
- Clean and maintain tools and equipment.
- May build scaffolding or set up ladders.
- May prepare cost estimates, order materials, and keep business records.

APTITUDES

- Be able to learn types of paint, process of painting and finishing walls and woodwork, and use of related tools.
- Have average ability with words and numbers.
- Be able to do precise work accurately.
- Have average eye-hand coordination and finger and hand dexterity.
- Be able to make decisions based on observation and experience.
- Be able to see differences in color.

WORK SETTING

Environment

Work indoors and outdoors.

Hours

Work 40 to 50 hours a week; hours may be longer during warm seasons; shorter hours or layoffs are possible during the winter months.

Employers

Building or painting contractors; real estate firms; property managing companies; companies who hire their own maintenance such as schools, hospitals, and manufacturers; and self-employed.

CONSIDERATIONS

- Workers face hazards from contact with dust and paint fumes and falls from ladders and scaffolds.
- Job involves long hours of standing, stooping, and climbing.

NEBRASKA EMPLOYMENT

About 2,180 painters and paperhangers are projected to be employed by 1991.

WAGES

Hourly wages for painters range between a low of $4.66 and a high of $11.79. Wages will vary according to geographic location as well as the size of the contractor, manufacturer or firm. In Nebraska the annual salary range for all painters is between $9,700 and $24,544. Nationally, yearly salaries range between $10,000 and $33,000.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National

Somewhat Favorable

Factors

- The employment outlook depends mainly on the level of commercial and residential construction.
- Most openings result from replacement needs as turnover is high in this occupation.
- More homeowners paint their own homes or use nonpaintable surfaces.

PREPARATION

SKILLS

- Knowledge of types of paint and varnishes and the process of painting.
- Skills in using the tools of the trade.
- Skills in mixing and matching colors.
- Skills in estimating costs and keeping records.

TRAINING

- Painters learn on the job under the supervision of an experienced worker or through an apprenticeship.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school courses should include geometry, chemistry, arts and crafts, construction, wood working, accounting, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 846.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 373.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6443 PAPERHANGERS

OCCUPATIONAL DESCRIPTION

Paperhangers cover walls, ceilings, and other surfaces with wallpaper, fabric, or other types of decorative coverings. They may also paint or arrange for the painting of woodwork and wall and ceiling areas. DOT 841.381-010

HOLLAND CODE

RCS (Realistic, Conventional, Social)

SPECIALTIES

Billposters (841.684-010)

NCIS RELATED OCCUPATIONS

6424	Drywall Installers
6442	Painters
6444	Plasterers

WORK ACTIVITIES

- Determine appropriate wall covering and amount necessary.
- Prepare surfaces to be covered; repair holes and cracks; and clean surfaces.
- Coat surfaces with sizing.
- Cut strips of covering allowing for matching.
- Hang covering applying adhesive if necessary.
- Trim edges and smooth seams.
- May estimate costs, keep business records, and hire and supervise employees.

APTITUDES

- Be able to learn the tools and methods used in applying wallcoverings.
- Have average use of words and numbers.
- Be able to see color differences and match patterns.
- Have average eye-hand coordination and hand and finger dexterity.
- Be able to do precise work accurately.
- Be able to make decisions based on observation and experience.

WORK SETTING

Environment
 Work indoors.

Hours
 Work 40 to 50 hours a week; longer hours possible during peak construction time.

Employers
 Building contractors or self-employed.

CONSIDERATIONS

- Standing, stooping, bending, climbing, and lifting medium loads are necessary in this work.
- There may be a risk of injury from falling off ladders or scaffolding.

NEBRASKA EMPLOYMENT

About 2,180 paperhangers and painters are projected to be employed by 1991.

WAGES

Salaries for paperhangers will vary according to the size and location of the building contractor as well as the professional reputation of the worker. In Nebraska, salaries range between $14,000 and $21,500 a year. Nationally, salaries span a broad range of between $10,000 and $33,000 a year.

EMPLOYMENT GROWTH

Nebraska
 Unfavorable

National
 Somewhat Favorable

Factors
- The demand for paperhangers may increase because of the popularity of wallpaper.
- The employment outlook also depends on the level of commercial and residential construction.
- More homeowners do their own paperhanging.

PREPARATION

SKILLS

- Knowledge of various wallcoverings.
- Knowledge of the tools and methods used in applying wallcoverings.
- Skills in estimating costs and keeping records.

TRAINING

- New workers begin either by working under supervision of an experienced paperhanger or by learning the trade through apprenticeship.
- Previous work experience as a paperhanger helper is helpful.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in geometry, arts and crafts, construction, accounting, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 846.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 373.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
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22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6444 PLASTERERS

OCCUPATIONAL DESCRIPTION

Plasterers finish indoor walls and ceilings with plaster coatings to help make them fireproof and soundproof. They may also apply cement, plastic, or stucco to outdoor surfaces and make decorative designs in plaster. The special tools they use include hawks, floats, rods, and sprayers. DOT 842.361-018

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Molding Plasters (842.361-026)
Stucco Masons (842.381-014)

NCIS RELATED OCCUPATIONS

6412	Brickmasons
6422	Carpenters
6424	Drywall Installers
6442	Painters
6443	Paperhangers
6465	Insulation Workers

WORK ACTIVITIES

- Prepare surface to be coated.
- Mix plaster.
- Erect scaffolds if necessary.
- Spread first coat; scratch plaster to create uneven surface; apply another rough coat; and apply finish coat.
- Work surface for smooth or textured effect.
- Repair damaged areas.
- Estimate costs and order materials.

APTITUDES

- Be able to learn the methods of applying plaster and finishing the surfaces.
- Have average use of numbers and words.
- Be able to see slight differences in objects.
- Have average space and form perception, eye-hand coordination, hand and finger dexterity, and color perception.
- Be able to make decisions based on information, observation, and experience.
- Be able to do precise work accurately.

WORK SETTING

Environment
  Work indoors and outdoors.
Hours
  Work 40 hours a week; longer work hours may be required during peak construction seasons; layoffs may occur because of poor weather conditions.
Employers
  General contractors, plastering contractors, and self-employed.

CONSIDERATIONS

- Job requires medium lifting of loads weighing from 25 to 50 pounds, climbing, stooping, reaching overhead for long periods, and good vision.
- Plasterers may be exposed to wet and dusty working conditions and the hazards of climbing on ladders and scaffolding.

NEBRASKA EMPLOYMENT

About 50 plasterers and stucco masons are projected to be employed by 1991.

WAGES

Annual salaries for plasterers will vary according to the size and geographic location of the contracting firm. In Nebraska, annual salaries range between $13,000 and $21,000 a year. Nationally, the average hourly rate is $21.98. However, poor weather and periodic declines in construction may limit the hours of plasterer works.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors
- The outlook depends upon the level of commercial and residential construction.
- The popularity of plastering has shown some increase in new construction as well as in renovation work.

PREPARATION

SKILLS

- Knowledge of plastering materials, tools, and methods.
- Skills in mixing plaster compounds.
- Skills in creating special textures and finish coats.
- Skills in estimating costs and keeping records.

TRAINING

- Most plasterers learn their trade through on-the-job training and apprenticeship programs.
- Previous work experience as a plasterer's helper is helpful.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in geometry, chemistry, arts and crafts, construction, accounting, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 847.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 375.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6450 PLUMBERS AND PIPE FITTERS

OCCUPATIONAL DESCRIPTION

Plumbers and pipe fitters install pipe systems that carry water, steam, air, or other liquids or gases. Also, they repair piping systems and put in plumbing fixtures, appliances, and heating and cooling equipment. Some install water, gas, and waste disposal systems in buildings; oil, air, and water lines in engines; or piping systems in planes and ships. Others install complex pipe systems used by oil refineries and nuclear plants. They use wrenches, drills, saws, torches, power machines, and other kinds of tools and equipment. DOT 862.381-018, 862.381-030

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Furnace Installers (862.361-010)
Water-Softener Servicers-and-Installers (862.684-034)
Gas-Meter Installers (953.364-010)
Water-Meter Installers (954.564-010)
Pipe Fillers (862.281-022)
Military Plumbers and Pipe Fitters (M64500)

NCIS RELATED OCCUPATIONS

6160	Heating, Air-Conditioning, and Refrigeration Mechanics
6179	Building Maintenance Workers
6824	Sheet Metal Workers

WORK ACTIVITIES

- Plan piping systems or follow blueprints and drawings.
- Mark and cut pipes and prepare pipe ends for assembly.
- Make connections and seal joints.
- Cut holes in construction.
- Install necessary fixtures.
- Open clogged drains; thaw frozen pipes; repair and replace pipes, fittings, and fixtures; and extend piping systems.
- Prepare cost estimates and keep business records.
- May sell plumbing fixtures and supplies.

APTITUDES

- Be able to learn the techniques of installing and repairing pipe systems and fixtures.
- Have average use of number and words.
- Be able to visualize objects from drawings, pictures, and blueprints and to see important details.
- Have average hand and finger dexterity and general physical coordination.
- Be able to do precise work accurately and quickly.
- Be able to make decisions based on facts, observations, and experience.

WORK SETTING

Environment
Work indoors and outdoors.
Hours
Work 40 to 50 hours a week; frequently on call for emergencies; seasonal layoffs may occur.
Employers
Plumbing and building contractors, large manufacturers, gas production and distribution companies, utilities, heating and cooling businesses, large businesses, government agencies, educational institutions, and self-employed.

CONSIDERATIONS

- Plumbing and pipe fitting occupations are among the highest paid in the construction industry.
- Plumbers may work in cramped and wet conditions and be exposed to hazards from falls, cuts, burns, or electrical shocks.
- Many are members of a union.

NEBRASKA EMPLOYMENT

About 1,800 plumbers and pipe fitters are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for plumbers and pipe fitters range between $7.13 and $12.54. Workers employed full time may expect a salary range of $14,800 and $26,000 a year. The average annual salary for all plumbers and pipe fitters in Nebraska is $23,100. Nationally, annual salaries range between $12,900 and $40,900 a year and the median annual salary is $23,972.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Favorable
Factors

- The employment outlook depends on the amount of residential and commercial construction.
- Repair and renovation of present systems creates many openings.
- Some opportunities are the result of replacement needs, but the turnover rate is low.
- Competition in some areas is very keen.

PREPARATION

SKILLS

- Knowledge of the techniques of installing and repairing pipe systems and fixtures.
- Skills in using plumbing and pipe fitting tools.
- Knowledge of building codes and safety procedures.
- Skills in reading blueprints and manuals.
- Skills in estimating costs and keeping records.
- Skills in welding, soldering, and brazing.

LICENSING OR CERTIFICATION

- Plumbers must be licensed by the City Codes Administration, Plumbing Division.
- There are three levels of plumbers' licenses: apprentice, journeyman, and master.
- An apprentice must have at least four years of experience and pass an exam before getting a journeyman's license; a journeyman must hold a journeyman's license for one year and pass an exam before receiving a master's license. Only those with a master's license may be contractors.

TRAINING

- Some employers prefer applicants with a high school diploma and training at a vocational or technical school or community college.
- These workers may learn skills through on-the-job training or an apprenticeship program.
- Previous work experience as a plumber's helper is useful.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in geometry, chemistry, physics, drafting, construction, accounting, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 860-862, 924, and 926.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 377.
Military Career Guide (1988-89 ed.), p. 161.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6462 CARPET AND SOFT TILE INSTALLERS

OCCUPATIONAL DESCRIPTION

Carpet and soft tile installers lay and replace soft floor coverings such as carpet and linoleum. They may also install pads that go under carpets or cover walls and cabinets with metal or plastic tiles.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Soft-Tile Setter (861.381-034)
Carpet Layers (864.381-010)
Floor Layers (864.481-010)

WORK ACTIVITIES

- Remove old coverings or paint, level uneven spots, clean surface.
- May sand floors or nail under-layment board.
- Measure and cut flooring and any foundation materials.
- Fit flooring around obstructions.
- Mark lines on prepared surface as guides.
- Spread adhesive if needed or install tacks.
- Lay and stretch the covering matching patterns.
- May estimate costs, order materials, and keep business records.

APTITUDES

- Have ability to learn the processes, materials, and tools used in installing floor coverings.
- Be able to see slight differences in objects and colors.
- Have average physical coordination and use of hands and fingers.
- Be able to do precise work accurately.
- Be able to make decisions based on facts.

WORK SETTING

Environment
    Work indoors; may work outdoors installing all-weather carpeting.
Hours
    Work 40 hours a week; some evening or weekend hours ; part-time work sometimes available; seasonal layoffs possible.
Employers
    Flooring contractors, furniture or department stores, and self-employed.

CONSIDERATIONS

- Installers may develop knee and back problems because they do most of their work kneeling and using carpet stretching equipment.
- Workers also lift heavy, bulky loads of carpet or vinyl.

NEBRASKA EMPLOYMENT

About 470 carpet and soft tile installers are projected to be employed by 1991.

WAGES

In Nebraska, annual salaries for carpet and soft tile installers will vary according to the size and location of the business as well as the full time or part time status of the worker. Individuals employed on a full time basis may expect a salary range of $17,000 to $22,450 a year. Nationally, the salary range is $25,000 to $50,000 a year.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Favorable
Factors
- Much carpet laying is renovation work; so, employment remains fairly steady even when construction is on the decline.
- Employment opportunities are influenced by the amount of residential and commercial construction.

PREPARATION

SKILLS

- Knowledge of various floor coverings and installation methods.
- Skills in using measuring and cutting tools.
- Skills in reading blueprints and layouts.
- Skills in estimating costs and materials.

TRAINING

- Most employers prefer to hire high school graduates.
- Workers usually learn their skills either on the job or through formal apprenticeships.
- Previous work experience as a carpet layer's helper is useful.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in geometry, drafting, construction, shop, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 856 and 863.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 365.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6463 CONCRETE FINISHERS

OCCUPATIONAL DESCRIPTION

Concrete finishers mix, pour, and finish concrete for many types of construction projects. Work may range from finishing small jobs, such as patios and floors, to building huge dams and concrete highways. They also color concrete surfaces and make concrete beams, columns, and panels.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Cement Masons (844.364-010)
Concrete-Stone Finishers (844.461-010)
Concrete Rubber (844.684-010)

NCIS RELATED OCCUPATIONS

6412 Brickmasons

WORK ACTIVITIES

- Level construction site and set up forms.
- Place reinforcing rods or metal mesh.
- Pour and spread concrete mixture in prepared forms.
- Level and smooth surface of concrete.
- May apply stone chips or special colors to surface.
- Prepare final surface.
- Dismantle forms and smooth sides and edges.
- Apply sealing coats.
- May estimate costs and order materials.

APTITUDES

- Be able to learn the tools and methods necessary to do cement pouring and finishing.
- Have average use of words and numbers.
- Have average use of hands and average physical and eye-hand coordination.
- Be able to see slight differences in objects.
- Be able to do precise work accurately.
- Be able to visualize objects from pictures and drawings.
- Be able to make decisions based on facts, observations, and experience.

WORK SETTING

Environment
    Work indoors and outdoors; may travel long distances to work sites.
Hours
    Work 40 hours a week; hours may be longer during peak construction times; layoffs are possible.
Employers
    Construction contractors, government agencies, and self-employed.

CONSIDERATIONS

- Work is fast paced and strenuous and requires good physical stamina.
- Finishers work in cramped positions and on their knees for long periods.
- Many workers belong to unions.

NEBRASKA EMPLOYMENT

About 730 concrete finishers are projected to be employed by 1991.

WAGES

In Nebraska, annual salaries for concrete finishers will vary primarily according to the economic conditions which affect new construction projects as well as geographic location of the worker. Yearly salaries range between $14,850 and $21,200. Nationally, salaries range between $11,600 and $35,600 a year.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Favorable
Factors
- Employment outlook depends upon the level of commercial and residential construction.
- This occupation is sensitive to ups and downs of the general economy.
- Greater use of concrete as a building material may increase the demand for concrete finishers.

PREPARATION

SKILLS

- Knowledge of concrete finishing and layout techniques.
- Skills in using masonry tools and equipment.
- Skills in reading blueprints and specifications.
- Knowledge of weights and measures and building codes.
- Skills in estimating costs.

TRAINING

- Workers usually are trained either on the job or through an apprenticeship programs.
- Short programs in masonry are available at some technical schools or community colleges.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in geometry, physical science, drafting, construction, and shop.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 848-849.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 366.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6464 GLAZIERS

OCCUPATIONAL DESCRIPTION

Glaziers cut, fit, and install various types of glass into doors, windows, showcases, or shower doors. They may work with many different types of glass: window glass; tempered, reflectina, insulated, and plate glass; mirrors; and leaded glass panels. Some may work in factories cutting, grinding, and polishing glass. DOT 865.381-010

HOLLAND CODE

RSC (Realistic, Social, Conventional)

SPECIALTIES

Mirror Installers (865.361-010)

WORK ACTIVITIES

- Remove glass and clean frame.
- May cut glass to correct size and shape.
- Apply putty or mastic to frame and press glass into place.
- Secure glass in frame with clips, points, or strips.
- Smooth and seal putty or mastic.
- May prepare costs estimate and order materials.

APTITUDES

- Be able to learn the methods needed for cutting and installing glass sections.
- Have average use of words and numbers.
- Be able to follow oral and written instructions accurately.
- Have average space and form perception, hand and finger dexterity, and physical coordination.
- Be able to see slight differences in objects.
- Be able to make decisions based on facts and do precise work accurately.
- Be able to do a variety of tasks.

WORK SETTING

Environment

Work indoors and outdoors.

Hours

Work 40 hours a week; may be seasonal layoffs during winter months.

Employers

Construction contractors; glazing contractors; manufacturers of windows, doors, and mirrors; glass shops; and self-employed.

CONSIDERATIONS

- Glaziers climb, stoop, reach, and often lift large panes of glass.
- Workers can be injured by sharp glass edges or cutting tools and from falls from scaffolds.
- Most workers provide their own hand tools.

NEBRASKA EMPLOYMENT

About 360 glaziers are projected to be employed by 1991.

WAGES

Salaries for glaziers will vary according to the size and location as well as the type of employer. The demonstrated skills of the glazier will also determine the salary level. In Nebraska, yearly salaries for glaziers range between $14,350 and $25,000 a year. Experienced glaziers working for major contractors in large cities will earn the higher salaries. Nationally, hourly wages range from $12.00 to $24.00. Apprentice wage rates are usually 50-60 percent of these wages. Construction declines and weather conditions can influence the number of hours a glazier works.

EMPLOYMENT GROWTH

Nebraska

Favorable

National

Favorable

Factors

- Employment outlook is influenced by the amount of residential and commercial construction.

PREPARATION

SKILLS

- Knowledge of the methods used in cutting and installing glass sections.
- Skills in measuring and cutting glass.
- Skills in reading blueprints and following instructions.

- Knowledge of safety practices and regulations.
- Skills in estimating costs and keeping records.

TRAINING

- Some employers prefer to hire high school graduates.
- Glaziers are usually trained through informal on-the-job training or formal apprenticeship programs.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in geometry, algebra, construction, shop, accounting, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 864.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 371.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6465 INSULATION WORKERS

OCCUPATIONAL DESCRIPTION

Insulation workers fill or line walls, floors, and ceilings with materials to help keep buildings warm in the winter and cool in the summer. They may also install insulation in meat storage rooms and around steam pipes and boilers to prevent the transfer or loss of heat. DOT 863.364-014

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Blower Insulators (863-664.010)
Composition-Weatherboard Appliers (863.684-010)
Insulation-Power-and-Unit Tenders (863.685-010)

NCIS RELATED OCCUPATIONS

6422	Carpenters
6444	Plasterers

WORK ACTIVITIES

- Install a variety of insulation materials such as fiberglass, rock wool, cellulose, and cork.
- Place sheets or rolls of insulation and fasten it with staples, screws, or nails.
- Cut openings for pipes and outlets.
- Blow insulation into attic, siding, and other areas.
- Tie, bind, or glue insulating materials into place around exposed cold or hot surfaces such as pipes, ducts, or furnaces.

APTITUDES

- Be able to learn methods of applying insulation and using insulation blowers.
- Have average space and form perception.
- Be able to make decisions based on information.
- Have good eye-hand and physical coordination and hand and finger dexterity.
- Be able to work within set standards and exact measurements.

WORK SETTING

Environment
    Work indoors and outdoors.
Hours
    Work 40 hours a week; longer hours may be required during peak construction periods; may be subject to seasonal layoffs.
Employers
    General contractors, insulating contractors, and self-employed.

CONSIDERATIONS

- Some insulation workers are being hired to remove or cover asbestos materials in buildings which may expose them to hazardous materials.
- Job requires medium lifting of loads weighing up to 50 pounds, climbing, stooping, and reaching.

NEBRASKA EMPLOYMENT

About 100 insulation workers are projected to be employed by 1991.

WAGES

Hourly wages for insulation workers in Nebraska range between $5.50 and $8.50. Individuals employed full time will average between $11,440 and $17,680 a year. Salaries will vary depending on experience and demonstrated skill. The size and geographic location of the company will also determine the wage level. Nationally, average wages and benefits for workers in commercial and industrial settings total $52,000. Workers in residential construction earn much less. Additional bonus incentives are common for workers assigned to remove asbestos.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Favorable
Factors
- The employment outlook depends on the level of construction activity which is affected by economic conditions.

- Increased opportunities may result from the need to install energy-saving insulation in new and old buildings.

PREPARATION

SKILLS

- Knowledge of insulation materials, equipment, and methods of installation.
- Skills in using insulation blowers.
- Skills in reading blueprints.
- Knowledge of safety procedures.

TRAINING

- Most insulation workers learn their skills informally on the job.
- Most employers require that applicants be high school graduates.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in geometry, shop, construction, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 863.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 372.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6466 PAVING EQUIPMENT OPERATORS

OCCUPATIONAL DESCRIPTION

Paving equipment operators tend equip-ment that spreads or smooths concrete, asphalt, or other materials on roads, parking lots, or airport runways. They may also use equipment that packs gravel, dirt, or other material.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Asphalt-Paving-Machine Operators (853.663-010)
Concrete-Paving-Machine Operators (853.663-014)
Road-Oiling-Truck Drivers (853.663-018)
Stone-Spreader Operators (853.663-022)
Curb-Machine Operators (853.683-010)
Joint-Cleaning-and-Grooving-Machine Operators (853.683-018)
Asphalt-Heater Tenders (853.685-010)
Road-Roller Operators (859.683-030)
Tamping-Machine Operators (869.683-018)
Military Paving Equipment Operators (M64660)

NCIS RELATED OCCUPATIONS

6479	Construction Workers
8312	Operating Engineers
8318	Industrial Truck Operators

WORK ACTIVITIES

- Turn valves to regulate temperature of asphalt.
- Move levers, push pedals, and turn handwheels to start, stop, and control spreading and packing equipment.
- Clean, repair, and replace machinery parts.
- Move machinery from work site to work site.

APTITUDES

- Be able to learn the operations of paving equipment.
- Have average use of words to follow instructions and average use of numbers to set up equipment.
- Be able to judge distances and have average space and form perception.
- Have average physical and motor coordination and use of hands and fingers.

WORK SETTING

Environment
Work outdoors; usually work outdoors in all kinds of weather; may travel long distances to work sites.
Hours
Work 40 or more hours a week; longer work hours may be required during warmer seasons; may be subject to seasonal layoffs.
Employers
Paving contractors, state and local highway departments, and construction companies.

CONSIDERATIONS

- Operators are exposed to noise and vibration and danger of injury from heavy equipment.
- Workers may be required to lift medium loads weighing up to fifty pounds.

NEBRASKA EMPLOYMENT

About 770 paving equipment operators are projected to be employed by 1991.

WAGES

Wages for paving equipment operators range between a low of $7.26 per hour to a high of $12.89 per hour. Annual salaries in Nebraska range between $15,100 and $26,800 a year. Income levels will vary according to the size and location of the contractor or construction company as well as the amount of time lost due to seasonal layoff. The amount of training and experience held by the worker will also impact the salary level. Nationally, salary averages are somewhat lower than Nebraska salary figures at $14,220 to $22,000 a year.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Somewhat Favorable

Factors
- Cutbacks in federal funding has limited repairs and new construction projects.
- Opportunities are best with private contractors.

PREPARATION

SKILLS

- Knowledge of how to operate various types of road equipment.
- Knowledge of road construction and repair procedures.
- Skills in understanding and following instructions.

TRAINING

- Most employers have no special educational requirements.
- Skills are usually learned on the job beginning at an entry-level, low-skilled position. With experience, workers are promoted to paving equipment operators.
- Training in formal programs for heavy equipment operation may be helpful.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

271	Vehicle & Equipment Operation
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in basic reading, writing, and math; shop; construction; and engine repair.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 852-853.
Guide to Occupational Exploration (2nd ed., 1984), pp. 256-261.
Military Career Guide (1988-89 ed.), p. 160.

SCHOOLS

22501	Central Community College-Hastings Campus
99831	Nebraska Custom Diesel Driver's Training, Inc.
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22214	Western Nebraska Community College-Sidney Campus

6468 ROOFERS

OCCUPATIONAL DESCRIPTION

Roofers cover the tops of buildings with materials such as slate, wood, asphalt, or tile to insulate and waterproof them. They repair various kinds of roofing including tar and gravel. Also, they may waterproof walls and floors. DOT 866.381-010

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Roofer Applicators (866.684-010)

NCIS RELATED OCCUPATIONS

6422	Carpenters
6479	Construction Workers

WORK ACTIVITIES

- Install various types of board or sheet insulation.
- Fit strips of felt or metal flashing.
- Apply layers of hot asphalt or tar and stone or slag.
- Fasten shingles, slate, or tile to the roof.
- Cover exposed fasteners.
- Locate defective areas, smooth the surface, apply new materials, and ensure surface is watertight.
- Waterproof concrete walls and floors.
- May prepare cost estimates.

APTITUDES

- Be able to learn types of materials used in roofing and how they are applied.
- Have average use of numbers.
- Be able to visualize objects from sketches and drawings and to see details in objects.
- Have average physical coordination and hand and finger dexterity.
- Be able to make decisions using data.
- Be able to do careful work following set standards.

WORK SETTING

Environment

Work outdoors; may travel long distances to work sites.

Hours

Work 40 hours a week; may work longer hours during peak construction times; may be subject to seasonal layoffs.

Employers

Roofing and construction contractors, building supply stores, government agencies, and self-employed.

CONSIDERATIONS

- Work is strenuous and involves much standing, climbing, bending, and squatting.
- Roofers risk injuries from falls and burns.
- Roofing work is especially hot during the summer.

NEBRASKA EMPLOYMENT

About 610 roofers are projected to be employed by 1991.

WAGES

In Nebraska, salaries for roofers range between $9,850 and $10,850 a year. Nationally, salaries span a much broader range at $10,000 to $30,200 a year. The higher salaries will be paid to experienced workers in major metropolitan areas with union affiliation.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National

Favorable

Factors

- Job opportunities are influenced by the amount of residential and commercial construction.
- Some openings will result from the high turnover rate in this occupation.

PREPARATION

SKILLS

- Knowledge of roofing materials and how they are applied.
- Knowledge of safety practices.
- Skills in reading blueprints.
- Skills in calculating measurements and estimating costs.

TRAINING

- Most employers prefer high school graduates.
- Roofers may be trained either on the job or through formal apprenticeship programs.
- Previous work experience as a roofer's helper is useful.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in geometry, shop, drafting, accounting, and construction.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 864-865.

Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.

Occupational Outlook Handbook (1990-91 ed.), p. 378.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6473 STRUCTURAL METAL WORKERS

OCCUPATIONAL DESCRIPTION

Structural metal workers join steel frameworks and other metal parts of structures such as buildings, bridges, dams, and storage tanks. Also they place steel or iron in forms used to make reinforced concrete. In their work, they use blueprints, power tools, hoisting equipment, and a variety of hand tools.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Structural-Steel Workers (801.361-014)
Metal Building Assemblers (801.381-010)
Reinforcing-Metal Workers (801.684-026)
Military Ironworkers (M64730)

NCIS RELATED OCCUPATIONS

6176	Elevator Installers and Repairers
6814	Boilermakers
6824	Sheet Metal Workers
7714	Welders

WORK ACTIVITIES

- Lay out the work following blueprints, sketches, or drawings; number each piece of steel or iron.
- Set up necessary scaffolding, planks, and safety nets.
- Hoist steel members, align them, and bolt and weld them into position.
- Place steel bars or rods in concrete forms.
- Determine amount of steel mesh needed and cut and bend it over area to be reinforced.

APTITUDES

- Be able to learn the processes and safety practices used in joining metal frameworks.
- Have average use of numbers and words.
- Be able to see how things fit together and see slight differences in objects.
- Have good physical and eye-hand coordination and manual dexterity.
- Be able to make decisions based on facts.
- Be able to make precise movements and follow rigid standards.
- Be able to cooperate with other members of a work crew.

WORK SETTING

Environment
    Work indoors but mostly outdoors; often work at great heights; may travel long distances to work sites.

Hours
    Work 40 hours a week; may work longer hours during peak construction periods; may be subject to seasonal layoffs.

Employers
    Construction contractors, metal fabricating firms, government agencies, public utilities, and industrial firms.

CONSIDERATIONS

- Work requires physical strength and stamina for climbing, stooping, reaching, balancing, carrying, and lifting heavy loads weighing up to 100 pounds.
- Workers risk injuries from falls.

NEBRASKA EMPLOYMENT

About 450 structural metal workers are projected to be employed by 1991.

WAGES

Annual salaries for structural metal workers will vary according to the size of the contracting firm or agency as well as the geographic location. In Nebraska, salaries range between $13,850 and $21,200 a year. The higher salaries will go to workers with experience who have completed either an on-the-job training or apprenticeship program and who live in a larger city. Nationally, salaries span a broad range of $19,600 and $32,100 a year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable

National
    Somewhat Favorable

Factors
- Construction levels are affected by economic conditions.
- Growing use of structural steel in constructing buildings should increase the demand for these workers.
- Competition for these positions is usually keen.

PREPARATION

SKILLS

- Knowledge of the processes used in joining metal frameworks.
- Knowledge of safety practices.
- Skills in reading blueprints.
- Skills in measuring, marking, cutting, and welding.
- Skills in working as part of a team.
- Skills in the proper use of equipment and tools.

TRAINING

- The minimum educational requirement for most workers is high school graduation.
- Most structural metal workers learn their skills through on-the-job training or apprenticeship programs.
- Previous training or work experience in welding may be helpful.

EDUCATIONAL PROGRAM

281	Auto Body Repair
295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in shop, drafting, metal work, algebra, and geometry.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 806-807.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.). p. 383.
Military Career Guide (1988-89 ed.), p. 159.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6474 EARTH DRILLERS

OCCUPATIONAL DESCRIPTION

Earth drillers set up and operate many kinds of earth drilling equipment. Some use drilling equipment to tap water deposits or to make space for underground pipes. Others drill holes for poles or posts or for concrete pier foundations. A few drill into the earth to remove soil samples for testing or to prepare holes to be filled with explosives used in mining and construction work.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Well-Drill Operators (859.362-010)
Earth-Boring-Machine Operators (859.682-010)
Core-Drill Operators (930.682-010)
Military Well Drillers (M64740)

NCIS RELATED OCCUPATIONS

6520	Oil Well Drillers
8650	Extractive Helpers

WORK ACTIVITIES

- Control drills used to bore into the earth.
- Decide whether pipe is raised or lowered.
- Examine core samples to determine nature of rock layers.
- May supervise a drilling crew.
- Assemble drilling tools.
- Keep records of drilling progress.

APTITUDES

- Be able to learn drilling procedures.
- Have average ability with words and numbers.
- Be able to perform a variety of tasks.
- Have average eye-hand coordination and be able to make visual comparisons.
- Be able to work quickly and accurately following set procedures.
- Be able to perform a variety of tasks.
- Be able to make decisions based on data.

WORK SETTING

Environment

Work outdoors; may work in all types and extremes of weather; may work in remote areas and be away from home for weeks or months at a time.

Hours

Usually work eight-hour days for seven days with a few days off; may rotate working night, swing, and day shifts.

Employers

Utility companies, construction contractors, well-drilling companies, state highway departments, mining companies, and self-employed.

CONSIDERATIONS

- Workers stand most of the time, lift heavy objects, and climb to heights of 60 or more feet.

NEBRASKA EMPLOYMENT

About 130 earth drillers are projected to be employed by 1991.

WAGES

In Nebraska, annual salaries will vary according to the size and location of the company as well as the experience and training of the worker. A salary range of $10,850 and $21,250 may be expected by workers employed in this field. The National salary range is somewhat higher than Nebraska salaries at $17,500 to $25,250 a year.

EMPLOYMENT GROWTH

Nebraska

Favorable

National

Somewhat Favorable

Factors

- Demand for new water wells is closely related to the general level of construction activity.
- Mining and large construction projects have declined in recent years.

PREPARATION

SKILLS

- Knowledge of drilling techniques and safety procedures.
- Knowledge of geology.
- Skills in maintaining and operating equipment.

- Skills in supervising others.
- Skills in keeping records.

TRAINING

- A high school diploma is desirable.
- Most learn their skills on the job by beginning as helpers or floor hands; usually these are not entry-level jobs.
- Formal training in industrial mechanics may be helpful.
- Training in specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

287	Industrial Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in shop, mechanics, drafting, math, and physics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 853-854 and 913.
Guide for Occupational Exploration (2nd ed., 1984), pp. 256-261.
Military Career Guide (1988-89 ed.), p. 162.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha
22214	Western Nebraska Community College-Sidney Campus

6479 CONSTRUCTION WORKERS

OCCUPATIONAL DESCRIPTION

Construction workers help build, maintain, or dismantle structures such as buildings, roads, and pipelines. Their work duties and settings vary. They often work as part of a team or crew. DOT 869.664-014

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Excavators (850.684-010)
Irrigation System Installers (851.383-010)
Siders (863.684-014)
House Movers (869.261-010)
Poured-Concrete-Wall Technicians (869.261-018)
House Builders (869.281-014)
Swimming Pool Installers and Servicers (869.463-010)
Drapery Hangers (869.484-014)
Sewer Line Repairers (869.664-018)
Fence Erectors (869.684-022)
Lawn Sprinkler Installers (869.684-030)
Sewer-Pipe Clearners (899.664-014)
Highway Maintenance Workers (899.684-014)
Asbestos Removal Workers (869.684-082)
Municipal Maintenance Workers (899.684-046)

NCIS RELATED OCCUPATIONS

6422	Carpenters
6466	Paving Equipment Operators
6868	Roofers
8710	Construction Laborers

WORK ACTIVITIES

- Determine the amount and types of materials needed using blueprints and specifications.
- Prepare materials by measuring, cutting, or mixing.
- Set up ladders, scaffolding, markers, or signs.
- Complete construction or repairs according to instructions.
- Clean up construction or repair site.
- May explain care and use of installed equipment to customers.
- May estimate costs.

APTITUDES

- Be able to learn the variety of duties related to the specific occupations.
- Have average use of words and numbers.
- Be able to work with others.
- Be able to visualize objects from drawings and blueprints and see slight differences in objects.
- Have average physical coordination and hand and finger dexterity.
- Be able to make decision based on data and to do precise work accurately.

WORK SETTING

Environment

Work outdoors usually; may have to work out in all kinds of weather.

Hours

Work 40 hours a week; longer hours may be required during peak construction seasons; may be subject to seasonal layoffs.

Employers

Construction contractors, government agencies, paving materials manufacturers; retail businesses, lawn services, siding companies, house moving businesses, excavation contractors, and self-employed.

CONSIDERATIONS

- Job requires stooping, reaching, climbing, and lifting of heavy loads.
- Workers exposed to all types of hazards.
- Many construction workers belong to unions.

NEBRASKA EMPLOYMENT

About 19,690 construction workers are projected to be employed by 1991.

WAGES

In Nebraska, annual salaries for construction workers employed full time vary widely according to the size and location of the company as well as the demonstrated skill, experience, training and union affiliation of the worker. Salaries span a range between $16,800 and $24,000 a year. Nationally, salaries span a somewhat broader range of $8,060 and $26,520 a year. Many con-struction workers receive substantial additional income from overtime and independent con-tracting in addition to their regular salary. However, they may also lose time due to construction declines or bad weather.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors
- Employment opportunities are influenced by the general economy and the amount of construction activity.
- The increased use of power equipment may decrease the need for these workers.
- The number of openings available also depends on the appropriation of government funds for construction and repair.

PREPARATION

SKILLS

- Knowledge of construction methods, materials, and operations associated with each specialty.
- Skills in using tools and equipment of the trade.
- Skills in interpreting and following drawings and instructions.
- Skills in estimating costs.
- Skills in working with others.

TRAINING

- Some employers prefer to hire workers with a high school education and/or vocational training.
- Most construction workers learn the necessary skills through informal on-the-job training.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

288	Construction Trades
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in geometry, shop, construction, drafting, wood working and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 852, 863, 866, 868-870, and 875.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255 and 262-275.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6520 OIL WELL DRILLERS

OCCUPATIONAL DESCRIPTION

Oil well drillers operate a variety of drills to take oil from the earth. Also, they may use specially designed equipment to look for or to test for oil deposits. Some direct the use of special tools and techniques to recover objects that sometimes block wells. Others operate truck-mounted hoists equipped with a derrick to clean and restore old and damaged oil or gas wells.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Rotary Derrick Operators (930.382-022)
Rotary Drillers (930.382-026)

NCIS RELATED OCCUPATIONS

6474	Earth Drillers
8650	Extractive Helpers

WORK ACTIVITIES

- Attach drilling bit to lengths of hollow pipe.
- Regulate speed of engine and pressure of tools as hole is bored.
- Watch gauges and slush pumps and control draw works.
- Examine core samples or drillings.
- Recover lost or broken pieces using special tools.
- Add additional lengths of pipe.
- Keep records of footage drilled, location and layers of earth drilled, and materials used.
- Cap well or turn valves to regulate flow from well.

APTITUDES

- Be able to learn methods of operating drilling equipment.
- Have average verbal and numerical ability.
- Be able to do a variety of work activities and work within set standards.
- Have average space and form perception, physical and eye-hand coordination, and manual dexterity.
- Be able to make decisions based on data.

WORK SETTING

Environment
  Work outdoors in all kinds of weather; usually work in rural areas.

Hours
  Work 40 or more hours a week; may work rotating shifts as drills usually run 24 hours a day.

Employers
  Oil or natural gas companies and independent drilling companies.

CONSIDERATIONS

- Job may be strenuous requiring workers who can stand or walk for long periods and lift loads weighing up to 150 pounds.
- Drillers are exposed to hazards such as the danger of working around moving parts or on high places.

NEBRASKA EMPLOYMENT

Less than 100 oil well drillers are projected to be employed by 1991.

WAGES

In Nebraska, salaries for oil well drillers vary only slightly according to the experience of the worker as well as the size of the company. Annual salaries for oil well drillers employed full time range between $17,850 and $19,000 a year. Nationally, salaries are substantially higher than Nebraska salaries. Hourly wages for onshore drillers range between $9.98 and $11.78 per hour. Annually, salaries range between $20,600 and $24,500 a year. Offshore drillers earn $14.75 and $15.35 per hour. Annual salaries range between $30,600 and $32,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable

National
  Unfavorable

Factors
- Many rigs are not working and many oil drilling companies are shutting down.
- There is a high turnover rate in this small occupation.

PREPARATION

SKILLS

- Knowledge of the methods and equipment used in drilling for oil and natural gas.
- Skills in reading pressure gauges.
- Skills in keeping records.
- Knowledge of soils and preparing soil samples.

TRAINING

- Most employers prefer to hire high school graduates.
- Drillers usually learn their skills on-the-job from experienced workers.
- Training in specialty occupations may be obtained through apprenticeship.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in math, physics, shop, mechanics, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 912.

Guide for Occupational Exploration (2nd ed., 1984), pp. 256-261.

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6811 TOOL AND DIE MAKERS

OCCUPATIONAL DESCRIPTION

Tool and die makers operate machine tools and instruments to produce metal and plastic devices such as gauges, jigs,and fixtures used in the manufacturing process. They make devices that hold metal while it is shaved, stamped, or drilled. Also, they construct metal forms to shape metal in stamping or forging operations. Some of the molds are used for die asting and molding plastics. These workers also repair tools and dies. DOT 601.280-046

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Stamping Die Makers (601.280-010)
Tool Makers (601.280-042)
Die Makers (601.381-014)
Bench Tool Makers (601.281-026)
Plastic Tool Makers (601.381-026)

NCIS RELATED OCCUPATIONS

3220	Designers
32205	Industrial Designers
6813	Machinists
7512	Lathe and Turning Machine Operators
7542	Molding and Casting Machine Operators

WORK ACTIVITIES

- Determine the sequence of operations in making tools and dies using blueprints, models, or specifications.
- Lay out lines or marks to indicate machining operations or metal to be removed.
- Perform machining operations using milling machines, lathes, grinders, and computerized machine tools.
- Build jigs and fixtures to hold parts while they are being drilled, bored, reamed, or inspected.
- Make and assemble component parts of a die used in stamping and forging operations.

APTITUDES

- Be able to learn machining methods and tool operation.
- Have average use of words and numbers.
- Be able to see important details in objects and see how things fit together.
- Have good physical coordination and hand and finger dexterity.
- Be able to make decisions based on facts.
- Be able to do precise work accurately.
- Have good mechanical abilities.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; may be required to work rotating or swing shifts.
Employers
    Manufacturers of metal working and other machinery, fabricated metal products, transportation equipment, and electrical machinery.

CONSIDERATIONS

- Work involves danger of working around high-powered machinery.
- Most buy their own hand tools.
- Some workers are union members.

NEBRASKA EMPLOYMENT

About 590 tool-and-die makers are projected to be employed by 1991.

WAGES

Beginning wages for workers upon completion of apprentice training or graduation from an accredited vocational program range between $14,800 and $18,300 per year. The average beginning wage for community college or vocational school graduates is $16,020 per year. National averages for all workers in this occupation range between $17,400 and $42,500 with a median annual wage of $29,900.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Somewhat Favorable

Factors

- Employment growth may be limited by the substitution of nonmetal for metal parts, foreign competition, and changes in metal working technology.
- There is a low turnover rate in this occupation.

PREPARATION

SKILLS

- Knowledge of machining method and tool operation.
- Skills in using the machine tool and precision-measuring instruments.
- Skills in reading blueprints.
- Skills in mechanical drawing and tool designing.
- Knowledge of safety procedures.

TRAINING

- Most tool and die makers receive their training through machining programs at vocational schools or community colleges or through apprenticeship programs.
- A few employers provide on-the-job training.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, trignometry, physics, shop, drafting, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 491 and 493.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 402.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6813 MACHINISTS

OCCUPATIONAL DESCRIPTION

Machinists shape pieces of metal into all kinds of tools and parts. They are skilled in following blueprints and written specifications and in operating machine tools such as drill presses, engine lathes, grinding machines, planers, and shapers. Also, they may install, adjust, maintain, set up, and repair various types of machines and metal working equipment. DOT 600.280-022

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Instrument Makers (600.280-010)
Automotive Machinists (600.280-034)
Maintenance Machinists (600.280-042)
Parts Salvagers (638.281-026)
Military Machinists (M68130)

NCIS RELATED OCCUPATIONS

6811	Tool and Die Makers
7512	Lathe and Turning Machine Operators
7513	Milling and Planing Machine Operators
7514	Punching and Shearing Machine Operators
7517	Press and Brake Machine Operators
7518	Drilling and Boring Machine Operators

WORK ACTIVITIES

- Study blueprints and specifications.
- Lay out work establishing reference points and guidelines on metal stock.
- Determine which machines, tools, and operations are needed for the machining process.
- Clamp tool in holder, bring it into position, and start machine operation.
- Make sure metal is being machined to exact dimensions.
- Use hand tools to finish metal to specifications.
- Keep equipment in operating condition.

APTITUDES

- Be able to learn machine methods and tools.
- Be able to follow complex directions and do mathematical calculations.
- Have good physical coordination and use of hands.
- Be able to do precise work accurately.
- Have ability to visualize objects from drawings and make visual comparisons.
- Be able to make decisions based on facts.
- Be able to handle a variety of tasks.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week.
Employers
    Manufacturers of machinery and transportation equipment, metal fabrication and machine shops, railroads, government agencies, auto repair shops, and machinists businesses.

CONSIDERATIONS

- Machinists stand most of the day and must be able to stoop, reach, and carry objects that weigh up to 50 pounds.
- Workers risk injury from high-speed cutting tools, moving machinery, metal chips, and abrasive dust.

NEBRASKA EMPLOYMENT

About 1,630 machinists are projected to be employed by 1991.

WAGES

Hourly wages for all machinists in Nebraska range between $8.19 and $13.02 per hour. Annual salaries for machinists employed full time range between $17,056 and $27,090 a year. Nationally, salaries range from $12,800 to $34,500 per year. The median wage is $22,620 per year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- Employment growth may be limited by the substitution of non-metal parts for metal parts, foreign competition, and technological changes.
- Most jobs will result from replacement needs.

PREPARATION

SKILLS

- Knowledge of machine ship practices including safety procedures.
- Skills in operating machine tools.
- Skills in reading and following blueprints.
- Skills in using measuring instruments.

TRAINING

- Some employees prefer applicants who have associate degrees in machine technology from technical schools or community colleges.
- Apprenticeship programs are also available.
- A few employers provide on-the-job training.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, trigonometry, physics, manufacturing, shop, drafting, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 488 and 556.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 394.
Military Career Guide (1988-89 ed.), p. 169.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6814 BOILERMAKERS

OCCUPATIONAL DESCRIPTION

Boilermakers put together, install, and repair boilers and other structures made of formed steel plate such as smokestacks, vats, and tanks. These structures are designed primarily to contain gases or liquids under pressure and are used in power plants, refineries, and industrial firms. Some repair sheet-metal sections of train engines. Others work on stationary boilers and tanks. DOT 805.261-014

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Boilerhouse Mechanics (805.361-010)
Boilermakers Fitters (805.361-014)
Boilermakers II (805.381-010)
Military Boiler Technicians (M68140)

NCIS RELATED OCCUPATIONS

6473	Structural Metal Workers
7714	Welders

WORK ACTIVITIES

- Mark curves, lines, points, and directions on metal plates according to blueprints or drawings.
- Cut and shape metal.
- Bolt or weld pieces of structure together.
- Construct foundations and scaffolds to support structures.
- Determine causes of trouble, dismantle the boilers or remove defective sections, and weld or rivet replacement parts or sections into place.

APTITUDES

- Be able to learn the methods of constructing, repairing, and servicing boilers and other steel plate structures.
- Have average verbal and math abilities.
- Be able to see important details in objects.
- Have average physical coordination and use of fingers and hands.
- Be able to work within set standards.
- Be able to make decisions based on data.

WORK SETTING

Environment

Work indoors in production areas and outdoors at construction sites; may work outdoors in various kinds of weather; may travel long distances to work sites.

Hours

Work 40 hours a week; longer hours are possible to meet construction deadlines; may be subject to seasonal layoffs.

Employers

Construction contractors; manufacturers of railroad equipment, fabricated metal products, and industrial machines; railroads; and repair shops of chemical, oil, gas, and utility companies.

CONSIDERATIONS

- Job requires climbing, stooping, reaching, and lifting of heavy loads weighing up to 100 pounds.
- Workers may be exposed to dangers from falls, working with heavy equipment, or burns.

NEBRASKA EMPLOYMENT

About 80 boilermakers are projected to be employed by 1991.

WAGES

Salaries for boilermakers will vary according to the size of the contractor, manufacturer or shop and the amount of training completed by the worker. In Nebraska, annual salaries range between $18,500 and $22,200 a year. Nationally, salaries average $28,600 a year.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National

Somewhat Favorable

Factors

- Most openings are to replace workers who leave the occupation.
- The outlook depends on the level of construction activity and expansion of industries that use boilers; most of these industries are sensitive to changes in the economy.

PREPARATION

SKILLS

- Knowledge of boiler assembly, installation, repair, and service.
- Skills in reading and following blueprints.
- Skills in welding and operating the tools of the trade.
- Knowledge of safety practices.

TRAINING

- Most boiler makers learn the skills of the trade through informal on-the-job training programs or through formal apprenticeships.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, shop, drafting, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 808-809.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 391.
Military Career Guide (188-89 ed.), p. 165.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6822 JEWELERS

OCCUPATIONAL DESCRIPTION

Jewelers design, make, repair, and sell jewelry and related products such as watch parts, plaques, and silverware. The jewelry may be made of precious metals such as gold, silver, and platinum and gemstones such as diamonds and rubies. They may be involved in all aspects of the work or may specialize in sales, craftwork, design, repair, and management. Many jewelers also sell and repair watches. DOT 700.281-010

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Silversmiths (700.281-022)
Stone Setters (700.381-054)

NCIS RELATED OCCUPATIONS

6171	Precision Instrument Repairers
6173	Locksmiths

WORK ACTIVITIES

- Create new jewelry styles or modify existing designs.
- Make samples of the designs using wax, plaster, metal, or other suitable materials.
- Construct one or more molds.
- Melt and pour casting metal into molds.
- Stamp jewelry from sheets or bars of metal.
- Finish pieces by polishing, drilling, filing, trimming, and soldering.
- Size or alter and mend or restore jewelry.
- Sell jewelry and other merchandise.
- Provide consultation and appraisal services.
- Manage business operations.

APTITUDES

- Be able to learn the methods of making and repairing jewelry.
- Have average use of words and numbers.
- Be able to visualize objects from drawings and figures and to see important details.
- Have average physical coordination and good hand and finger dexterity.
- Be able to do precise work accurately and make decisions based on facts.
- Be able to handle a variety of activities.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 to 50 hours per week.
Employers
  Jewelry manufacturers, retail stores, wholesale firms, repair shops, and self-employed.

CONSIDERATIONS

- Worker must be able to concentrate for long periods of time and must have good vision.
- Jewelers usually provide their own tools.

NEBRASKA EMPLOYMENT

About 170 jewelers are projected to be employed by 1991.

WAGES

Annual salaries for jewelers vary according to the size and geographic location of the store, manufacturer or repair shop as well as the demonstrated skill and reputation of the jeweler. In Nebraska, salaries range from $7,650 to $15,500 a year. Nationally, salaries vary according to area of specialization. Jewelers in retail stores earn a median salary of $22,000 yearly. Jewelry repair workers earn a median salary of $25,000. Experienced, unionized jewelers in manufacturing earn between $19,800 and $27,600 a year. The highest salaries will be paid to jewelers employed in major metropolitan areas.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Somewhat Favorable
Factors
  - Opportunities for jewelers in manufacturing are affected by jewelry sales which are affected by the ups and downs in family incomes.
  - Competition and factory automation have also caused job growth to slow.
  - The outlook appears to be best in jewelry repair as people choose to repair jewelry rather than buying new.

PREPARATION

SKILLS

- Knowledge of jewelry construction and repair.
- Knowledge of gems and precious metals.
- Skills in using the tools of the trade.
- Skills in estimating value of jewelry.
- Skills in design.
- Skills in business management.
- Skills in selling.

TRAINING

- High school graduation is the minimum educational requirement.
- Training for this job can be obtained through vocational schools and community colleges or apprenticeship programs.
- Some employers offer on-the-job training.

EDUCATIONAL PROGRAM

298	Precision Crafting and Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in chemistry, art, drafting, metal working, marketing, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 651-652.
Guide for Occupational Exploration (2nd ed., 1984), pp. 100-107.
Occupational Outlook Handbook (1990-91 ed.), p. 392.

SCHOOLS

11957	New York School of Locksmithing
11952	Paris Junior College
11920	University of Iowa
11921	University of Kansas
11925	Western Iowa Technical Community College

250

6824 SHEET METAL WORKERS

OCCUPATIONAL DESCRIPTION

Sheet metal workers assemble, install, and repair sheet metal products and equipment. They cut, bend, and straighten metal sheets to form equipment parts or sections. Also, they make items such as duct work, ventilators, furnace casing, and roofing. DOT 804.281-010

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Military Sheet Metal Workers (M68240)

NCIS RELATED OCCUPATIONS

6115	Automobile Body Repairers
6160	Heating, Air-Conditioning, and Refrigeration Mechanics
6450	Plumbers and Pipe Fitters
6473	Structural Metal Workers
7714	Welders

WORK ACTIVITIES

- Select proper type and thickness of sheet metal.
- Lay out work and mark reference points according to blueprints and specifications.
- Cut the sheets following the guidelines.
- Shape it with hammers or forming machines and punch or drill holes.
- Weld, solder, rivit, or bolt sections together.
- Smooth seams, joints, and rough surfaces.
- May install roofing and siding materials and gutters and downspouts.

APTITUDES

- Be able to learn the processes of sheet metal fabrication and assembly.
- Have average use of numbers and words.
- Be able to visualize objects from drawings or blueprints and to see slight differences in objects.
- Have average eye-hand and physical coordination and use of hands and fingers.
- Be able to make decisions based on using facts.
- Be able to do precise work according to set standards.

WORK SETTING

Environment
    Work indoors and outdoors.
Hours
    Work 40 hours a week; construction sheet metal workers are subject to seasonal layoffs.
Employers
    Government agencies; manufacturers of metal products; plumbing, heating air conditioning, and other construction contractors; railroads; and self-employed.

CONSIDERATIONS

- Workers bend, lift, stand, and squat in close quarters and awkward positions.
- They must be able to work in high places.
- The injury rates are high because these workers face dangers from falling and being burned or cut.

NEBRASKA EMPLOYMENT

About 990 sheet-metal workers are projected to be employed by 1991.

WAGES

Annual salaries for sheet metal workers employed full time range between $14,000 and $19,000 a year in Nebraska. Nationally, salaries average $39,000 a year. Apprentices start at about 40 percent of this wage and receive increases as they acquire skills.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- The outlook depends on the demand for sheet metal products and on the level of residential and commercial construction activitiy.
- Increased demand for more energy-efficient heating and air-conditioning systems.

PREPARATION

SKILLS

- Knowledge of the processes of sheet metal fabrication and assembly.
- Knowledge of the working properties of the various metals.
- Skills in reading and following blueprints.
- Skills in using the tools and machines of the trade.
- Knowledge of safety procedures.
- Skills in welding.

TRAINING

- The minimum educational requirements is high school graduation.
- Most sheet metal workers learn their skills through on-the-job training or apprenticeship programs.
- Some technical schools and community colleges may offer programs that would be helpful.

EDUCATIONAL PROGRAM

281	Auto Body Repair
295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, chemistry, shop, drafting, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 808.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 381.
Military Career Guide (1988-89 ed.), p. 174.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6832 CABINETMAKERS

OCCUPATIONAL DESCRIPTION

Cabinetmakers cut, shape, and put together the many different parts of complex wooden products. They may build and repair wooden cabinets and furniture or make parts for wooden products such as doors and window frames. DOT 660.280-010

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Wood Machinists (669.380-014)

NCIS RELATED OCCUPATIONS

6422	Carpenters
6835	Furniture Finishers

WORK ACTIVITIES

- Provide drawings, blueprints, and specifications of objects to be constructed.
- Select wood and materials to be used and mark each piece.
- Rough-shape the pieces.
- Trim and sand each piece and bore necessary holes.
- Join pieces together using glue, screws, and dowels.
- Finish the surfaces.
- Attach hardware.
- May repair cabinets and furniture.
- May estimate costs.

APTITUDES

- Be able to learn wood working processes and machine operations.
- Have average use of words and numbers.
- Be able to picture objects from drawings and see slight differences in objects.
- Have average eye-hand coordination and finger and hand dexterity.
- Be able to handle a variety of activities and do precise work accurately.
- Be able to make decisions based on observation and facts.

WORK SETTING

Environment
  Work mainly indoors.
Hours
  Work 40 hours a week; may be subject to seasonal layoffs.
Employers
  Cabinet shops, mill work plants, construction contractors, furniture manufacturers, home furnishing stores, and self-employed.

CONSIDERATIONS

- Work sites tend to be noisy and the air full of wood, dust, or fumes from glue or paints and varnishes.
- Workers risk injuries from saws and other machines.
- The work involves stooping, reaching, and lifting loads weighing up to 50 pounds.
- Some furnish their own hand tools.

NEBRASKA EMPLOYMENT

About 740 cabinetmakers are projected to be employed by 1991.

WAGES

In Nebraska, annual salaries for cabinet makers range between $9,000 and $18,000 a year. The higher salaries will go to workers with experience and demonstrated skill. Nationally, salaries also span a wide range between $9,3600 and $27,600 a year.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors
  - The employment outlook is influenced by the increasing number of wood working operations that are being automated, the amount of construction activity, and the number of prefabricated units being installed.
  - Most opportunities will result from replacement needs.

PREPARATION

SKILLS

- Knowledge of cabinetmaking techniques.
- Skills in reading blueprints and drawings.
- Knowledge of the varieties of woods.
- Skills in selecting and cutting woods.
- Skills in using the tools and equipment of the trade.
- Knowledge of safety practices.
- Skills in estimating costs.

TRAINING

- Most employers require applicants who have graduated from high school.
- Most employees receive their training through an apprenticeship program or on-the-job training.
- Some technical schools or community colleges offer formal training programs.

EDUCATIONAL PROGRAM

288	Construction Trades
289	Wood Working
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, drafting, construction, shop, wood working, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 578 and 588.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 425.

SCHOOLS

22501	Central Community College-Hastings Campus
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha

6835 FURNITURE FINISHERS

OCCUPATIONAL DESCRIPTION

Furniture finishers perform tasks required to finish new furniture or to refinish damaged, worn, or used furniture. In small shops, they may perform all the jobs necessary to finish a piece of furniture including wood filling, sanding, staining or painting, finish coating, or polishing. In large shops or factories mass production methods are used, and finishers specialtze in completing one or two production operations. DOT 763.381-010

HOLLAND CODE

SRE (Social, Realistic, Enterprising)

NCIS RELATED OCCUPATIONS

6832 Cabinetmakers

WORK ACTIVITIES

- Take furniture apart and remove hardware if necessary.
- Remove old finishes.
- Fill holes and cracks with putty.
- Sand the surface smooth.
- Choose the finishing ingredient and match the color or shade.
- Brush or spray on several coats of the finish and sand surface between coats as needed.
- Apply finish coat.
- Polish or wax finished surface.
- May estimate costs.

APTITUDES

- Be able to learn the furniture refinishing and finishing processes.
- Have average use of words and numbers.
- Be able to see slight differences in objects and colors.
- Have average physical coordination and use of hands and fingers.
- Be able to do precise work accurately.
- Be able to make decisions based on facts and observations.

WORK SETTING

Environment
Work indoors.

Hours
Work 40 hours a week; longer hours may be needed to fill orders.

Employers
Furniture repair shops, refinishing shops, antique shops, cabinetmaking businesses, stores selling unfinished furniture, manufacturers of furniture, and self-employed.

CONSIDERATIONS

- Workers need to do much stooping, reaching, standing, and lifting loads up to 25 pounds.
- Finishers are often exposed to fumes from thinners and finishes, and their hands may become chapped or cut.

NEBRASKA EMPLOYMENT

About 70 furniture finishers are projected to be employed by 1991.

WAGES

In Nebraska, annual salaries for furniture finishers range between $7,250 and $11,375 a year. Many furniture finishers supplement their incomes with independent contracting for services. Nationally, salaries span a wide range between $9,360 and $27.600 a year. The highest salaries will be found in large furniture manufacturing companies.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Somewhat Favorable
Factors
- Most openings will result from the need to replace those workers who leave the profession.

PREPARATION

SKILLS

- Knowledge of furniture refinishing and finishing processes.
- Skills in matching colors and finishes.
- Skills in using the tools and machines of the trade.

- Knowledge of the many varieties of wood.
- Skills in estimating costs.

TRAINING

- High school graduation is preferred by most employers.
- Most finishers learn their skills through on-the-job training or apprenticeship programs.
- Some technical schools or community colleges may offer short courses on wood refinishing.

EDUCATIONAL PROGRAM

289	Wood Working
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, art, shop, accounting, and wood working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 754.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 425.

6842 LITHOGRAPHERS AND PHOTOENGRAVERS

OCCUPATIONAL DESCRIPTION

Lithographers and photoengravers transfer or copy detailed designs or pictures onto metal plates to be printed. They photograph the copy to be printed, develop the negatives, and prepare the metal plates used in printing.

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Photoengravers (971.381-022)
Photoengraving Printers (971.381-034)
Lithographic Plate Maker (972.381-010)
Strippers (971.381-050)

NCIS RELATED OCCUPATIONS

6868	Photographic Process Workers
7444	Photoengraving and Lithographing Machine Setup Operators

WORK ACTIVITIES

- Photograph and develop negatives of the copy.
- Make corrections on negatives.
- Mix chemicals for platemaking solutions.
- Wash plate to remove grease and dirt.
- Spread solution over surface.
- Adjust controls of photocomposing machine.
- Place plate on machine and expose plate to image from negative.
- Wash exposed plate and apply lacquers, inks, and solutions.

APTITUDES

- Be able to learn the methods of photoengraving and lithography.
- Have average math and verbal abilities.
- Be able to see important details and visualize objects from descriptions, pictures, and drawings.
- Be able to distinguish colors.
- Have average physical coordination and hand and finger dexterity.
- Be able to work quickly and accurately following set procedures.
- Be able to make decisions based on facts.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; longer hours may be needed to meet printing deadlines; some work night shifts.
Employers
    Commercial printers; newspaper, book, and magazine printers; government agencies; colleges and universities; and large libraries.

CONSIDERATIONS

- Job requires standing for long periods, stooping, and reaching for objects.
- Workers may be exposed to toxic chemicals.

NEBRASKA EMPLOYMENT

About 410 lithographers and photoengravers are projected to be employed by 1991.

WAGES

Starting salaries for lithographers and photoengravers will vary as to the type, size and location of the employer as well as the demonstrated skill of the worker. In Nebraska, annual salaries range between $16,400 and $22,000 a year. Nationally, salaries for experienced lithographic machine operators range from $33,300 to $41,180.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- Most openings will occur to replace present workers who leave their jobs.
- The use of automated printing equipment will limit employment somewhat.

PREPARATION

SKILLS

- Knowledge of photoengraving and lithographic printing processes.

287

- Skills in operating photographic equipment.
- Skills in making mechanical adjustments and repairs.

TRAINING

- High school graduation is the minimum educational requirement.
- Most workers learn their skills through on-the-job training or apprenticeship programs.
- Technical schools and community colleges offer formal training programs.

EDUCATIONAL PROGRAM

318	Graphics and Printing
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in chemistry, art, drafting, and commercial /graphic arts.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 934 and 936.
Guide for Occupational Exploration (2nd ed., 1984), pp. 100-107.
Occupational Outlook Handbook (1990-91 ed.), p. 414.

SCHOOLS

44820	Career Institute of Omaha
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21803	College of Saint Mary
21504	Concordia College
21606	Dana College
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21717	Union College
99827	Universal Technical Institute
21622	Wayne State College

6844 BOOKBINDERS

OCCUPATIONAL DESCRIPTION

Bookbinders fold, sew, staple, or bind printed materials such as books or magazines after they leave printing shops. Machines are used for much of the work. DOT 977.381-010

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Book-Sewing-Machine Operators II (653.682-010)

NCIS RELATED OCCUPATIONS

7643	Printing Machine Operators
7655	Sewing Machine Operators

WORK ACTIVITIES

- Fold sheets of printed paper into sections using a folding machine.
- Collate sections into proper sequence manually or by machine, insert photographs, maps, or drawings.
- Sew together sections; remove air from between pages; glue backs.
- Trim book to size; shape the back of the book.
- Color edges of pages and reinforce backs of books.
- Glue covers on to book bodies.
- May punch holes in or perforate printed pages.

APTITUDES

- Be able to learn the steps in assembling and binding printed materials.
- Have average use of numbers and words.
- Be able to visualize objects from drawings and descriptions and to make visual comparisons.
- Have average use of hand and physical coordination.
- Be able to work quickly and accurately.
- Be able to do a variety of tasks and make decisions based on data.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week.
Employers
    Commercial printers, newspapers, bookbinding shops, book publishers, libraries, and colleges and universities.

CONSIDERATIONS

- Work may be highly routine and tiresome.
- Workers must stand for long periods and lift and carry packages weighing up to 90 pounds.
- Binders work in noisy shops and are exposed to injuries from machinery.

NEBRASKA EMPLOYMENT

About 90 bookbinders are projected to be employed by 1991.

WAGES

In Nebraska, entry level hourly wages for bookbinders range from $5.07 to $8.80. Annual salaries for bookbinders employed full time range between $10,550 and $18,304. The entry level wage will be determined by the type, size and location of the employer as well as the training and skill of the worker. Nationally, salaries span a range between $7,904 and $28,500 a year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- Most openings will occur to replace bookbinders who leave the occupation.
- Many companies are installing computer-controlled equipment which is able to do more work with fewer employees.

PREPARATION

SKILLS

- Knowledge of the steps involved in assembling and binding printed materials.
- Skills in using folding, sewing, and cutting machines.
- Skills in concentrating for long periods of time.

TRAINING

- Most employers expect applicants to have graduated from high school.
- Bookbinders are trained informally on the job or in formal apprenticeship programs.

EDUCATIONAL PROGRAM

318	Graphics and Printing
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in shop.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 942.
Guide for Occupational Exploration (2nd. ed, 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 411.

SCHOOLS

44820	Career Institute of Omaha
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21803	College of Saint Mary
21504	Concordia College
21606	Dana College
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21717	Union College
99827	Universal Technical Institute
21622	Wayne State College

6852 TAILORS AND DRESSMAKERS

OCCUPATIONAL DESCRIPTION

Tailors and dressmakers design, make, alter, and/or fit tailored garments. They measure the customer, advise on fabric and style, cut the fabric, sew the garment sections together, and do fittings and adjustments. Some do only alterations and repairs.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Alteration Tailors (785.261-010)
Custom Tailors (785.261.014)
Dressmakers (785.361-010)
Military Clothing and Fabric Repairers (M68520)

NCIS RELATED OCCUPATIONS

3220	Designers
32204	Clothes Designers
6853	Upholsterers
6854	Leather Workers and Repairers
7655	Sewing Machine Operators

WORK ACTIVITIES

- Assist customers in selecting style and materials.
- Estimate costs for making garments.
- Take and record customers measurements.
- Make original or alter standard patterns to fit them.
- Pin patterns to material and cut garment pieces.
- Assemble garment sections.
- Fit garments to customers and make adjustments.
- Sew garments by hand or machine.
- Make final fitting and add finishing details.
- May modify clothing to fit customers.
- May perform repairs on garments.

APTITUDES

- Be able to learn the procedures of dressmaking, alterations, and repair.
- Have average use of numbers and words.
- Be able to visualize objects from patterns and descriptions and to make visual comparisons.
- Have average eye-hand coordination and hand and finger dexterity.
- Be able to make decisions based on data.
- Be able to follow detailed instructions.
- Be able to see differences in colors.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours a week; may work longer hours to meet work deadlines; may include evenings or weekends to accomodate customers' schedules.
Employers
  Retail clothing stores, laundry and dry cleaning firms, department stores, clothing manufacturers, bridal shops, and self-employed.

CONSIDERATIONS

- Work may involve sitting for long periods.
- Many employers pay workers on a commission basis.
- These workers may work under pressure to meet deadlines for customers.

NEBRASKA EMPLOYMENT

About 850 tailors and dressmakers are projected to be employed by 1991.

WAGES

In Nebraska, annual salaries for tailors and dressmakers will vary according to the size and location of the employer as well as the demonstrated talent of the worker. Tailors and dressmakers may expect a salary range between $7,500 and $17,500 a year. Nationally, salaries for custom tailors in department stores range from $16,400 to $18,300 a year. Wages paid in apparel factories vary according to specialty and range from $8,700 to $15,200 a year.

EMPLOYMENT GROWTH

Nebraska
  Favorable

National

Somewhat Favorable

Factors

- The majority of openings will result from the need to replace workers who leave the occupation.
- The outlook depends on the demand for custom-fit apparel and the supply of qualified applicants.

PREPARATION

SKILLS

- Knowledge of the principles of clothing construction.
- Knowledge of fabrics and materials.
- Skills in fitting and altering garments.
- Skills in communicating with customers.
- Skills in estimating costs.

TRAINING

- Most employers prefer to hire applicants who have training from vocational schools, community colleges, or colleges and universities in clothing design, textiles, or commercial sewing.
- Other methods of entry into this occupation are on-the-job training or apprenticeship programs.

EDUCATIONAL PROGRAM

144	Apparel Marketing
391	Home Economics
395	Textiles and Clothing
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include speech, business math, art, accounting, home economics, clothing and textiles, and marketing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 785.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Military Career Guide (1988-89 ed.), p. 166.

SCHOOLS

44820	Career Institute of Omaha
22307	Central Community College-Platte Campus
21102	Chadron State College
44822	Dory Passolt Models
44823	International School of Modeling
21311	Kearney State College
22718	Lincoln School of Commerce
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
44824	Nancy Bounds International
44717	Nancy Bounds Modeling School and Agency-Lincoln
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
44301	Spencer School of Business
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22517	York College

6853 UPHOLSTERERS

OCCUPATIONAL DESCRIPTION

Upholsterers make, repair, and replace upholstery used on furniture and inside and outside vehicles to cover, cushion, and protect seats and other surfaces. The tools they use include tack pullers, chisels, sewing machines, and measuring devices.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Automobile Upholsterers (780.381-010)
Furniture Upholsterers (780.381-018)
Inside Upholsterers (780.681-010)

NCIS RELATED OCCUPATIONS

6852	Tailors and Dressmakers
6854	Leather Workers and Repairers
7655	Sewing Machine Operators

WORK ACTIVITIES

- Remove worn covering, webbing, and padding.
- Fasten new webbing and springs into place.
- Attach burlap covering and place necessary padding.
- Measure, cut and stitch to size the covering materials.
- Place final covering and tack into the frame.
- Add ornamental trim.
- May reconstruct furniture and refinish wooden surfaces.
- May estimate costs.

APTITUDES

- Be able to learn upholstering techniques.
- Have average use of words and numbers.
- Be able to visualize objects from drawings and descriptions and to see important details.
- Have average physical coordination and use of hands and fingers.
- Be able to do detailed work accurately.
- Have good sense of color.
- Be able to make decisions based on facts.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours; may include some evenings or weekends to consult with customers.
Employers
  Furniture manufacturers, custom repair and upholstery shops, retail furniture stores, auto upholstery shops, antique shops, and self-employed.

CONSIDERATIONS

- Work involves a great deal of standing, bending, stooping, reaching, and some lifting of medium loads weighing up to 50 pounds.
- Upholsters may work in dusty areas and may suffer cuts from sharp tools.
- Most workers buy their own hand tools.

NEBRASKA EMPLOYMENT

About 270 upholsterers are projected to be employed by 1991.

WAGES

In Nebraska, salaries for upholsterers range between $9,850 and $13,900 a year. Salaries will be determined by the size and geographic location of the business as well as the skill and experience of the worker. Nationally, salaries span a very broad range between $11,400 and $28,600 a year. Experienced workers who have mastered upholstering techniques and who live in large cities will earn the higher salaries.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Unfavorable
Factors
- The majority of job openings will result from the need to replace workers who leave the profession.
- Consumers are increasingly replacing rather than reupholstering worn furniture.

PREPARATION

SKILLS

- Knowledge of fabrics and upholstering techniques.
- Skills in sewing, cutting, and matching materials.
- Skills in estimating costs and materials.
- Knowledge of the use and care of tools and equipment.
- Skills in working with customers.

TRAINING

- Most employers prefer to hire high school graduates.
- Job preparation is provided through on-the-job training and apprenticeship programs.
- Technical schools and community colleges offer classes in upholstering.

EDUCATIONAL PROGRAM

223	Leather Working and Upholstering
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in geometry, art, accounting, wood working, drafting, and home economics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 771.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 425.

SCHOOLS

11928	Emily Griffith Opportunity School
22304	Mid-Plains Community College

6854 LEATHER WORKERS AND REPAIRERS.

OCCUPATIONAL DESCRIPTION

Leather workers and repairers make, decorate, and repair leather products such as luggage, shoes, and saddles. They use a variety of power-operated equipment and hand tools such as heel-mailing machines, sewing machines, pinchers, and tack pullers. These workers may assemble entire products or make and repair particular parts of products.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Luggage Repairers (365.361-010)
Shoe Repairers (365.361-014)
Saddle Makers (783.381-026)
Custom Shoemakers (788.381-014)

NCIS RELATED OCCUPATIONS

6852	Tailors and Dressmakers
6853	Upholsterers
7655	Sewing Machine Operators

WORK ACTIVITIES

- Discuss plans or needed repairs with customers.
- Make casts, forms, blueprints, or drawings.
- Cut, assemble, and join fabrics and leather.
- Attach ornaments, hardware, and heels.
- Cut, stamp, or paint lettering or designs on leather.
- Polish and finish the leather surfaces.
- Sew rips, put in new linings, and replace hardware on leather products.
- Refinish surface of leather.
- Estimate costs and keep business records.

APTITUDES

- Be able to learn the processes of repairing, making, or decorating leather products.
- Have average use of words and numbers.
- Be able to visualize objects and see important details.
- Have average use of hands and fingers and physical and eye-hand coordination.
- Be able to do precise work to set standards.
- Be able to make decisions based on data.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; shop owners may work longer hours and weekends.
Employers
    Shoe repair shops, shoe stores, department stores, shoe factories, saddle-making shops, and self-employed.

CONSIDERATIONS

- Considerable standing and light lifting may be required.
- Workers may be exposed to odors and fumes from glue, stains, and dyes.

NEBRASKA EMPLOYMENT

About 40 leather workers and repairers are projected to be employed by 1991.

WAGES

Annual salaries for leather workers employed full time in Nebraska range between $7,850 and $10,650 a year depending on the demonstrated skill of the worker as well as the type, size and location of the employer. Nationally, salaries span a range of $12,500 and $22,900 a year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Unfavorable
Factors
- The increase in imports of inexpensive leather shoes and the popularity of non-leather shoes contribute to the decline in employment opportunities.
- Most positions are the result of replacement needs.

PREPARATION

SKILLS

- Knowledge of the techniques and equipment used in repairing, making, and decorating leather products.
- Knowledge of leather and its qualities.
- Skills in estimating costs and keeping records.
- Skills in using tools of the trade.

TRAINING

- The minimum educational requirement is usually high school graduation.
- Most repairers learn their skills on the job working as a helper to experienced repairers.
- Formal apprenticeship programs are also available.
- Technical schools or community colleges in other states offer training programs in leather working.

EDUCATIONAL PROGRAM

223	Leather Working and Upholstering
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, shop, drafting, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 248, 780, and 793.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 420.

SCHOOLS

11928	Emily Griffith Opportunity School
22304	Mid-Plains Community College

6864 OPTICAL GOODS WORKERS

OCCUPATIONAL DESCRIPTION

Optical goods workers make, fit, and sell eyeglasses, contact lenses, and other optical devices. Some workers measure and fit eyeglasses and contact lenses. Others grind and polish eyeglasses and contact lenses. Some perform both of these functions.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Dispensing Opticians I (713.361-014)
Opticians (716.280-014)
Military Opticians (M68640)

NCIS RELATED OCCUPATIONS

2810	Optometrists
36905	Optometric Assistants

WORK ACTIVITIES

- Measure facial contours of customers.
- Help customers select lenses and frames.
- Prepare work orders.
- Grind and polish surfaces of lenses to conform to prescription specifications.
- Cut lenses to fit frames, edge and smooth them, and assemble lenses and frames.
- Fit eyeglasses to customers and make adjustments.
- Make precise measurements for contact lenses, grind lenses, and fit lenses.
- Keep records, make appointments and order supplies.
- May grind lenses for telescopes, microscopes, cameras, and other equipment and instruments.

APTITUDES

- Be able to learn the techniques of making and fitting lenses and other optical equipment.
- Have average verbal and math abilities.
- Be able to visualize objects from pictures and sketches and to see slight differences in objects.
- Have good physical coordination and hand and finger dexterity.
- Be able to do precise work accurately.
- Be able to handle a variety of activities and make decision using facts.

WORK SETTING

Environment
    Work indoors
Hours
    Work 40 hours a week; may include evening and weekend hours.
Employers
    Retail optical stores, department stores, clinics, hospitals, opthalmologist and optometrist offices.

CONSIDERATIONS

- Job requires attention to detail and long periods of concentration.
- Work areas may be noisy and dusty because of the grinding and polishing machines.

NEBRASKA EMPLOYMENT

About 80 optical goods workers are projected to be employed by 1991.

WAGES

Annual salaries for optical goods workers range between $7,904 and $13,520 in Nebraska. Nationally, salaries a range between $10,000 and $15,000 a year. The highest salaries will be paid to experienced workers in larger cities.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Favorable
Factors
- The employment outlook depends on the availability of insurance plans and on computerization of optical laboratory equipment.
- The demands for corrective lenses is rising due to the increase in the elderly population and growing public awareness of the importance of good eyesight.

- The popularity of contact lenses, style changes in frames that make them more attractive, and the need for special kinds of glasses in industrial work add to the number of glasses made.

PREPARATION

SKILLS

- Knowledge of the processes used in making and finishing lenses and other optical pieces.
- Knowledge of machining techniques.
- Skills in interpreting prescriptions.
- Knowledge of the anatomy of the eye.
- Skills in dealing with people.
- Skills in using the precision measuring tools.

LICENSING OR CERTIFICATION

- Certification is not required but is available through the American Board of Opticianry.
- To qualify for certification, a person must graduate from an approved training program or have two years of work experience in an optical dispensary, and pass the required exam.

TRAINING

- Most employers prefer applicants who have completed formal training at a technical school or community college.
- Formal apprenticeship programs are also available.
- A few employers provide on-the-job training.
- Previous involvement with hobbies that develop manual dexterity is useful.

EDUCATIONAL PROGRAM

371	Optometric Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, biology, physics, drafting, accounting, data processing, and computer science.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 677 and 688.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 428.
Military Career Guide (1988-89 ed.), p. 170.

SCHOOLS

22803	Metropolitan Community College
22304	Mid-Plains Community College

6865 DENTAL LABORATORY TECHNICIANS

OCCUPATIONAL DESCRIPTION

Dental laboratory technicians make dentures, crowns, inlays, and bridges used to restore and replace people's teeth. Also, they make special devices used to straighten teeth. They work from dentists' written instructions and impressions of patients' teeth and mouths. DOT 712.381-018

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Orthodontic Technicians (712.381-030)
Military Dental Laboratory Technicians (M68650)

NCIS RELATED OCCUPATIONS

3630	Dental Hygienists
5232	Dental Assistants

WORK ACTIVITIES

- Determine type of appliance to be made by reading prescriptions and examining models and impressions.
- Mold dental appliances and position artificial teeth to prepare for casting.
- Pour plaster models of dentures to be repaired.
- Select and mount replacement teeth in model.
- Cast plastic reproduction of gums.
- Finish denture by curing, testing for accuracy, and polishing.
- Make and repair dental and orthodontic appliances.

APTITUDES

- Be able to learn the techniques of dental laboratory work.
- Have average use of words and numbers.
- Be able to visualize objects from pictures and descriptions and see slight differences in objects.
- Have good physical coordination and hand and finger dexterity.
- Be able to make decisions based on information and experience.
- Be able to do precise work and handle a variety of responsibilities.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours a week; may work longer hours during emergencies.
Employers
  Commercial dental laboratories, dental offices, veterans hospitals, and self-employed.

CONSIDERATIONS

- Job offers the opportunity to contribute to the improvement of public dental health.

NEBRASKA EMPLOYMENT

About 430 dental laboratory technicians are projected to be employed by 1991.

WAGES

Salaries for dental laboratory technicians vary according to the amount of training completed by the worker as well as the size and geographic location of the employer. In Nebraska, salaries for dental laboratory technicians employed full time range between $14,200 and $18,450 a year. Nationally, salaries span a broad range between $15,000 and $25,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Favorable
Factors
- Expansion of dental prepayment plans and dental insurance, an increasing number of older people who require dental restoration, and growing public concern with dental health are factors that contribute to employment growth.

PREPARATION

SKILLS

- Knowledge of oral anatomy, dental laboratory techniques, and construction materials.
- Skills in using laboratory tools and equipment.
- Skills in reading and interpreting prescriptions.

LICENSING OR CERTIFICATION

- Licensing is not required, but for professional recognition a person may be certified by the National Board of Certification.
- To be certified, a person must pass written and practical exams.

TRAINING

- Most employers prefer to hire people with formal training from technical schools or community colleges.
- Apprenticeship programs and some on-the-job training are available.

EDUCATIONAL PROGRAM

358	Dental Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in health, chemistry, metal working, physics, drafting, algebra, geometry, art, and biology.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 675.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 427.
Military Career Guide (1988-89 ed.), p. 168.

SCHOOLS

22501	Central Community College-Hastings Campus
21102	Chadron State College
21606	Dana College
21311	Kearney State College
22402	McCook Community College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21612	Midland Lutheran College
49823	Omaha College of Health Careers
21715	Peru State College
22711	Southeast Community College-Lincoln Campus
21717	Union College
21821	University of Nebraska at Omaha
21819	University of Nebraska Medical Center
21718	University of Nebraska-Lincoln

6867 PRECISION EQUIPMENT ASSEMBLERS

OCCUPATIONAL DESCRIPTION

Precision assemblers follow blueprints and wiring diagrams to put together electrical or electronic equipment parts and products. The equipment they assemble includes electric control units, telephone equipment, heating elements, and radios and televisions. They use test meters, precision-measuring instruments, and a variety of hand tools and power equipment to do their work.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Electric-Motor-Control Assemblers (721.381-014)
Assemblers (722.381-010)
Wire Coilers (724.361-010)
Industrial Equipment Assemblers and Wirers (826.361-010)
Precision Assemblers (828.381-014)

NCIS RELATED OCCUPATIONS

3711	Electrical and Electronic Engineering Technicians
7720	Assemblers

WORK ACTIVITIES

- Position product to be assembled and mount cables and support brackets.
- Check all parts for defects.
- Connect wires to terminals.
- Wrap, tie, and trim wires.
- Assemble other components using hand and power tools.
- Check finished assembly for defects and clean product.
- Move finished product to storage area.

APTITUDES

- Be able to learn methods of assembling electronic equipment.
- Have average verbal and math abilities.
- Be able to visualize objects from pictures and drawings, to make visual comparisons, and to see important details.
- Have average color vision.
- Have average physical coordination and use of hands and fingers.
- Be able to do precise work rapidly and accurately.
- Be able to adapt to a routine.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours a week; schedule may include evening and weekend hours.
Employers
  Manufacturers of electronic components and transportation and communication equipment.

CONSIDERATIONS

- Job requires light lifting, stooping, reaching, and good visions.
- Assemblers may have to sit or stand in the same place for most of the work shift.
- May be exposed to constant noise and vibration.

NEBRASKA EMPLOYMENT

About 1,130 precision assemblers are projected to be employed by 1991.

WAGES

Hourly wages for precision equipment assemblers range between $3.90 and $5.10. Annual salaries for workers employed full time range between $8,112 and $10,608 in Nebraska. Salaries will vary according to the size, type, and location of the employer as well as the demonstrated skill and experience of the worker. Nationally, salaries range from $9,100 to $23,800 for electronic equipment assemblers and from $21,500 to $32,000 a year for aircraft assemblers.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Somewhat Favorable

Factors

- Trends toward moving assembly operations overseas and using automation techniques may affect growth in this occupation.

PREPARATION

SKILLS

- Knowledge of basic electronics and the methods of assembling electronics equipment.
- Skills in reading blueprints and manufacturing outlines.
- Skills in using hand tools.
- Skills in soldering and welding.

TRAINING

- A high school diploma is usually required.
- Most assemblers learn their skills on the job by working with an experienced assembler.
- Some technical schools and community colleges offer courses in electronics and electronics assembly.
- Training in specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

292	Electrical & Electronics Equipment Repair
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in drafting, metal working, shop, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 694, 696, and 844.
Guide for Occupational Exploration (2nd ed., 1984), pp. 277-292.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

6868 PHOTOGRAPHIC PROCESS WORKERS

OCCUPATIONAL DESCRIPTION

Photographic process workers process photographic film and prints. They expose, develop, print, and finish photographs. Some specialize in a certain process such as retouching negatives or tinting or copying photos.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Photograph Retouchers (970.281-018)
Photography Colorists (970.381-010)
Photographic Process Screen Makers (971.381-042)
Reproduction Technicians (976.361-010)
Projection Printers (976.381-018)
Military Photoprocessing Specialists (M68680)

NCIS RELATED OCCUPATIONS

3260	Photographers
6842	Lithographers and Photoengravers

WORK ACTIVITIES

- Read work orders to determine the processes and materials needed.
- Mix appropriate chemical solutions.
- Immerse film in series of solutions to produce a negative or positive image.
- Dry film, trim, and mount for customer.
- May retouch negatives or prints using pencils or watercolors and brushes.
- May expose motion picture film.
- May prepare stencils used in silk screen printing.
- May use special cameras to enlarge photos.
- May duplicate printed material on paper, cloth, or film.

APTITUDES

- Be able to learn the photo finishing process.
- Have average use of words and numbers.
- Be able to work accurately following specific procedures.
- Have average eye-hand coordination and use of hands and fingers.
- Be able to make visual comparisons.
- Some jobs require color vision.
- Be able to make decisions based on data and experience.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week; schedules may include early morning and night hours; may include overtime hours.
Employers
Photo-finishing labs, portrait and commercial photography studios, newspapers, advertising agencies, magazine publishers, manufactures, and other businessess that do their own photography work.

CONSIDERATIONS

- Firms may employ blind workers as film strippers and splicers since these jobs are done in the dark.
- Workers stand most of the day and are subject to eye fatigue.
- Work is reptitious and fast paced, and workers are exposed to chemicals and chemical fumes.

NEBRASKA EMPLOYMENT

About 180 photographic process workers are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for photographic process workers range between $6.62 and $10.27. The average hourly wage for all workers in this field is $8.52. For workers employed full time the annual salary range is between $13,740 and $21,350. The average annual salary for all workers is $17,700. Salaries will vary according to the amount of education or training completed by the individual as well as their demonstrated skill at this craft. Nationally, the average annual salary range is $9,204 to $27,300 a year. The median wage is $14,300 a year. Many workers in this field supplement their regular salary with freelance work.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Favorable
Factors

- The growth in amateur photography due to better and easier-to-use cameras and growth in the use of photography in business and government has increased the amount of film being processed.
- The turnover rate in this occupation is high.

PREPARATION

SKILLS

- Knowledge of developing processes and equipment.
- Skills in mathematics for measuring chemicals and calculating times.
- Skills in following written and oral directions.
- Skills in working rapidly and accurately.
- Artistic skills.

TRAINING

- Most employers require applicants to be high school graduates.
- Training is usually received informally on the job.
- Some four-year and community colleges offer courses in photography.
- Courses in computer technology are helpful as advancements in photographic techniques are made.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

317	Film Arts
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in chemistry, math, media production, commercial/graphic art, and computer science.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 932, 934, and 939.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 432.
Military Career Guide (1988-89 ed.), p. 171.

SCHOOLS

22803	Metropolitan Community College
22304	Mid-Plains Community College

6871 BUTCHERS AND MEAT CUTTERS

OCCUPATIONAL DESCRIPTION

Butchers and meat cutters cut meat into sections using knives, saws, slicers, and power cutters. Some work in restaurants and grocery stores. They cut and trim sections of meat to make roasts, steaks, and chops and bone and grind meat. Others work in slaughter houses or meat packing firms. In these businesses, they kill, skin, and cut up animals such as cattle, sheep, and hogs.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Meat Butchers (316.681-010)
All-Round Butchers (525.381-014)
Military Food Service Specialist (M52100)

NCIS RELATED OCCUPATIONS

7753	Hand Cutting and Trimming Workers
8761	Hand Packers and Packagers

WORK ACTIVITIES

- Stun animals for slaughtering.
- Drain blood from animals.
- Slit open, trim and wash carcass.
- Skin animal, cut bones, and clean hides.
- Trim away fat, skin, and gristle.
- Cut carcass into retail cuts of meat.
- Grind meat.
- Wrap the prepared cuts and place in coolers or display cases.
- May prepare meat according to individual requests.
- May prepare specialty meat products.
- Keep work areas clean and in compliance with state and federal health codes.

APTITUDES

- Be able to learn the methods of slaughtering and meat cutting.
- Have average use of words.
- Be able to see important details.
- Have average depth perception, eye-hand coordination, and use of hands and fingers.
- Be able to work accurately within set limits.
- Be able to make decisions based on experience.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week.
Employers
    Retail food stores, wholesale food distributors, meat packing plants, hotels and restaurants, butcher shops, and self-employed.

CONSIDERATIONS

- Job requires standing for long periods and lifting of heavy loads weighing sometimes up to 150 pounds.
- They are exposed to hazards from using sharp tools and cutting machines.
- Workers are often exposed to extreme temperature changes between cooling room and work area.
- Some supply their own hand tools.
- Many butchers and meat cutters are union members.

NEBRASKA EMPLOYMENT

About 4,920 butchers and meat cutters are projected to be employed by 1991.

WAGES

Salaries for butchers and meat cutters range between $10,816 and $16,224 a year in Nebraska for workers employed full time. Hourly wages range between $5.20 and $7.80 for entry level workers. Nationally, salaries range between $11,000 and $29,300 a year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Unfavorable

Factors

- The employment outlook has declined because of automation and because demand for red meat products is declining.
- The growing trend toward cutting meat at central locations and shipping it to retail outlets has reduced opportunities also.

PREPARATION

SKILLS

- Knowledge of meats and handling, storing, grading, and cooking of meats.
- Knowledge of slaughtering and cutting techniques.
- Skills in handling cutting tools.
- Knowledge of sanitation codes and safety practices.
- Skills in helping customers.

TRAINING

- Many butchers and meat cutters learn their skills on the job while under the direction of an experienced worker.
- Formal training programs are available at technical schools or community colleges.
- Apprenticeship programs are also available.

EDUCATIONAL PROGRAM

399	Food Production, Management, and Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in biology, business math, shop, and foods.

BIBIOLOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 229 and 343-344.
Guide for Occupational Exploration (2nd ed., 1984), pp. 293-341.
Occupational Outlook Handbook (1990-91 ed.), p. 389.
Military Career Guide (1988-89 ed.), p. 123.

SCHOOLS

22501	Central Community College-Hastings Campus
11904	Ferris State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
11915	Rocky Mountain School of Meatcutting
22711	Southeast Community College-Lincoln Campus
21821	University of Nebraska at Omaha
21622	Wayne State College

6872 BAKERS

OCCUPATIONAL DESCRIPTION

Bakers mix and bake ingredients according to recipes to make bread, pasteries, and other baked goods. They prepare batters, doughs, fillings, and icings. Some bakers specialize in a certain product such as bread or pies. Others bake bread to test flour. DOT 526.381-010

HOLLAND CODE

RSE (Realistic, Social, Enterprising)

SPECIALTIES

Test Bakers (526.381-018)
Military Food Service Specialists (M52100)

NCIS RELATED OCCUPATIONS

5214 Cooks

WORK ACTIVITIES

- Select recipes and measure ingredients according to the recipe.
- Mix ingredients by hand or with power equipment.
- Portion out dough and put in ovens for specified time.
- Prepare fillings and frostings and apply to baked goods.
- May take orders from customers.
- May serve customers, order supplies, supervise employees, and keep business records.

APTITUDES

- Be able to learn various baking processes.
- Have average use of words and numbers.
- Be able to make decisions based on experience.
- Have average physical coordination and hand and finger dexterity.
- Be able to work quickly and accurately following set standards.
- Have good space and form perception and sense of color.
- Be able to handle a variety of responsibilities.

WORK SETTING

Environment
Work indoors.

Hours
Work 35 to 40 hours a week; schedule may include early mornings, nights, and weekends.

Employers
Grocery stores, retail and wholesale bakeries, hotels, restaurants, educational institutions, hospitals, camps, clubs, and self-employed.

CONSIDERATIONS

- Bakers stand a great deal and may be required to lift heavy loads weighing up to 100 pounds.
- Work involves handling hot objects and working in areas that are warm or hot.
- Some people with special skills may become fancy cake or pie makers.
- Some bakers belong to unions.

NEBRASKA EMPLOYMENT

About 130 bakers are projected to be employed by 1991.

WAGES

Hourly wages for bakers range between $4.00 and $7.80 in Nebraska. Annual salaries for entry level positions range between $8,320 and $16,224 depending on the amount of education or training completed. Nationally, salaries range between $11,400 and $13,000 a year.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Favorable
Factors
- More supermarkets are opening in-store bakeries.
- Demand is greatest for bakers who know all phases of the work.

PREPARATION

SKILLS

- Knowledge of the various baking processes and equipment used.
- Skills in figuring ratios and multiplying amounts of ingredients.

- Knowledge of the properties of baking ingredients.
- Skills in record keeping.

TRAINING

- Most employers require bakers to be high school graduates.
- Some begin as bakers' helpers and learn their skills on the job.
- Technical schools and community colleges offer formal training in baking.
- Apprenticeship programs are also available.

EDUCATIONAL PROGRAM

399	Food Production, Management, and Services
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in chemistry, biology, business math, home economics, foods, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 348.
Guide to Occupational Exploration (2nd ed., 1984), pp. 293-341.
Occupational Outlook Handbook (1990-91 ed.), p. 294.
Military Career Guide (1988-89 ed.), p. 123.

SCHOOLS

22501	Central Community College-Hastings Campus
11904	Ferris State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
11915	Rocky Mountain School of Meatcutting
22711	Southeast Community College-Lincoln Campus
21821	University of Nebraska at Omaha
21622	Wayne State College

6910 WATER AND SEWAGE TREATMENT PLANT OPERATORS

OCCUPATIONAL DESCRIPTION

Water and sewage treatment plant operators are in charge of equipment in treatment plants to remove harmful waste from water. They monitor control systems, adjust valves and gates, and operate pumps, engines, and generators. Operators may also run laboratory tests and supervise other workers. DOT 954.382-014)

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Waterworks Pump-Station Operators (954.382-010)
Wastewater-Treatment-Plant Operators (955.362-010)
Waste-Treatment Operators (955.382-014)
Wastewater-Treatment-Plant Attendants (955.585-010)
Military Water and Sewage Treatment Plant Operators (M69100)

NCIS RELATED OCCUPATIONS

6931	Stationary Engineers
6932	Power Plant and Systems Operators

WORK ACTIVITIES

- Watch control panels and adjust valves and gates to regulate flows.
- Interpret meter and gauge readings.
- Start and stop pumps, engines, and generators to control flow.
- Keep log of operations and meter and gauge readings.
- Give directions to attendants.
- Collect samples and run laboratory tests.

APTITUDES

- Be able to learn the methods of operating water and sewage treatment plants.
- Have average use of words and numbers.
- Be able to make visual comparisons.
- Have average physical coordination and use of hands.
- Be able to work within set standards and measurements.
- Be able to move from one task to another quickly.
- Be able to make decisions based on facts.

WORK SETTING

Environment

Work indoors and outdoors.

Hours

Work 40 hours a week; may require shift work including evenings, weekends, and holidays.

Employers

Utility companies, industrial waste treatment plants, private and municipal water and sewage treatment plants, colleges and universities, and government agencies.

CONSIDERATIONS

- Workers may be exposed to humid, wet working conditions, noise, chemical fumes, and sewage odors.
- Operators may be exposed to various hazards such as walking along slippery walkways, working around dangerous gases and toxic waste materials, or operating equipment that could cause injury.

NEBRASKA EMPLOYMENT

About 530 water and sewage treatment plant operators are projected to be employed by 1991.

WAGES

Salaries for water and sewage treatment plant operators range between $17,056 and $25,376 a year in Nebraska. Nationally, salaries range between $21,300 and $27,200 a year.

EMPLOYMENT GROWTH

Nebraska

Favorable

National

Unfavorable

Factors

- Employment growth will moderate due to a slowdown in construction of new treatment plants and automation of existing plants.
- Operators with formal training will find the greatest job opportunities.

PREPARATION

SKILLS

- Knowledge of processes used to process water and sewage.
- Knowledge of government regulations related to treatment plants.
- Skills in collecting samples and running lab tests.
- Skills in recordkeeping.
- Skills in figuring equations and making calculations.

TRAINING

- The minimum educational requirement is a high school diploma.
- Many employers require formal training at a technical school, community college, four-year college, or university.
- Apprenticeship training is available.
- Some employers offer on-the-job training.
- Most state water pollution control agencies offer training courses.

EDUCATIONAL PROGRAM

253	Engineering Technologies
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, advanced math, biology, chemistry, health, and industrial arts.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 926-927.
Guide for Occupational Exploration (2nd ed., 1984), pp. 219-223.
Occupational Outlook Handbook (1990-91 ed.), p. 409.
Military Career Guide (1988-89 ed.), p. 177.

SCHOOLS

11959	Hawkeye Institute of Technology
22803	Metropolitan Community College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College

6931 STATIONARY ENGINEERS

OCCUPATIONAL DESCRIPTION

Stationary engineers operate and maintain the machinery that provides power for industry and heating, cooling, and venti-lation in factories and other buildings. The machinery includes steam boilers, diesel engines, turbines, generators, pumps, and condensers. They start and stop equipment, watch meters and gauges, and adjust equipment when necessary. They also carefully watch over machinery safety controls and keep records of meter readings. DOT 950-382.026

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Refrigerating Engineers (950.362-014)
Boiler Operators (950.382-010)
Gas-Engine Operators (950.382-018)

NCIS RELATED OCCUPATIONS

6910	Water and Sewage Treatment Plant Operators
6932	Power Plant and Systems Operators

WORK ACTIVITIES

- Adjust levers and throttles to start, stop, and control the speed of equipment.
- Observe meters and gauges to determine operating conditions of equipment.
- Maintain required temperature and pressure.
- Analyze water in boilers and add chemicals or readjust valves if necessary.
- Record data related to operations.
- Inspect units to detect malfunctions or need for adjustments or repairs.
- Make repairs and clean equipment.
- Modify equipment to increase efficiency.

APTITUDES

- Be able to learn the operations and upkeep of power-producing machinery.
- Have average use of numbers and words.
- Be able to make decisions based on facts.
- Have average use of hands and space and form perception.
- Be able to work accurately following specific procedures and to check accuracy.
- Be able to do a variety of tasks that are routine.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; usually requires shift work that includes evenings, nights, weekends, and holidays.
Employers
    Hospitals, colleges and universities, office buildings, hotels, apartment buildings, factories, power stations, large institutions, and government agencies.

CONSIDERATIONS

- Some engineers work in areas that are hot, wet, noisy, and hazardous.
- Stationary engineers handle much responsibility.
- Some workers belong to a union.

NEBRASKA EMPLOYMENT

About 490 stationary engineers are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for stationary engineers range between a reported low of $6.95 to a high of $12.49. Annual salaries range between $14,456 and $25,979. The average hourly wage for all stationary engineers in Nebraska is $9.57. The average annual salary in Nebraska is $19,905. Nationally, annual salaries a range between $14,092 and $41,028 a year.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Unfavorable
Factors
- Increased automation is expected to limit the number of new jobs.

- Most openings will result from the need to replace workers who leave the occupation.
- Competition for any openings will be keen.

PREPARATION

SKILLS

- Knowledge of the operation and maintenance of power-producing machinery.
- Skills in recordkeeping.
- Skills in reading blueprints and drawings.
- Skills in welding.
- Mechanical skills.

LICENSING OR CERTIFICATION

- A license may be required by individual counties or cities.

TRAINING

- Most employers prefer applicants with a high school diploma.
- Formal vocational training is helpful. Related course work is available at technical schools or community colleges.
- Some workers are trained on the job by experienced engineers.
- Apprenticeship programs are also available.

EDUCATIONAL PROGRAM

287	Industrial Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High School subjects should include courses in algebra, geometry, advanced math, chemistry, physics, drafting, shop, energy/power systems, metal working, and electrical/electronics.

BIBIOLOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 919-920.
Guide for Occupational Exploration (2nd ed., 1984), pp. 219-223.
Occupational Outlook Handbook (1990-91 ed.), p. 407.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21715	Peru State College
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha
22214	Western Nebraska Community College-Sidney Campus

6932 POWER PLANT AND SYSTEMS OPERATORS

OCCUPATIONAL DESCRIPTION

Power plant and systems operators are in charge of equipment used to generate and distribute electrical power. They control motors, generators, pumps, and other equip-ment that furnish power for machinery or for electric power systems. They may assemble, repair, adjust, and maintain equipment; may read gauges; and may operate control panel switches. Also, they keep records of instrument readings and operations. Some supervise other plant workers. DOT 952.382-018

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Motor-Room Controllers (820.662-010)
Load Dispatchers (952.167-014)
Auxiliary Equipment Operators (952.362-010)
Hydroelectric Station Operators (952.362-018)
Power Reactor Operators (952.362-022)
Substation Operators (952.362-026)
Turbine Operators (952.362-042)
Military Power Plant Operators (M6932)

NCIS RELATED OCCUPATIONS

6910 Water and Sewage Treatment Plant Operators
6931 Stationary Engineers

WORK ACTIVITIES

- Watch control board and regulate equipment.
- Adjust controls to start and shut down boilers.
- Control auxiliary equipment.
- Maintain steam at certain temperature and pressure.
- Adjust transformer controls to regulate flow of power.
- Record instrument readings.
- Report malfunctions and supervise repairs.

APTITUDES

- Be able to learn the methods of operating power plant equipment.
- Have average use of words and numbers.
- Be able to visualize objects and make visual comparisons.
- Have average eye-hand coordination and use of hands.
- Be able to make decisions based on data.
- Be able to work within set standards.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; shift work is often required including evenings, nights, weekends, and holidays.
Employers
    Utility companies and government agencies.

CONSIDERATIONS

- Job requires medium lifting of loads weighing from 25 to 50 pounds, reaching, and good hearing and vision.
- Operators may be exposed to hazards at nuclear power plants.

NEBRASKA EMPLOYMENT

About 610 power plant and systems operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for power plant and systems operators range between a reported low of $7.30 to a high of $9.00. Annual salaries for all workers in this field span a range between $15,184 and $18,720. Nationally, median wage is $32,760 a year.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Somewhat Favorable
Factors
- Most job openings will result from the need for replacement workers.
- Employment opportunities are limited by the use of improved equipment and computer-controlled operating processes.

PREPARATION

SKILLS

- Knowledge of how to operate power-plant equipment.
- Skills in recordkeeping and problem solving.
- Mechanical skills.
- Skills in reading blueprints and drawings.

LICENSING OR CERTIFICATION

- Some cities and states require power plant and systems operators to be licensed.
- Employees in nuclear power plants are subject to licensing regulations established by the federal government. Nuclear powerplant operators must be licensed by the Nuclear Regulatory Commission. Requirements are successful completion of a 40 week course and NRC exam.

TRAINING

- High school graduation is usually the minimum educational requirements.
- Many operators learn their skills on the job by starting as helpers and gradually learning more advanced skills over a period of three to eight years.
- Apprenticeship programs are also available.
- Related coursework is also available from technical schools and community colleges.

EDUCATIONAL PROGRAM

253	Engineering Technologies
287	Industrial Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in math, physics, shop, metal working, electrical/ electronics, drafting, energy/power systems, and computer science.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed. 1977), pp. 921-923.
Guide for Occupational Exploration (2nd ed., 1984), pp. 219-223.
Occupational Outlook Handbook (1990-91 ed.), p. 406.
Military Career Guide (1988-89 ed.), p. 172.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
11959	Hawkeye Institute of Technology
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College
22214	Western Nebraska Community College-Sidney Campus

7101 GRAIN ELEVATOR SUPERINTENDENTS

OCCUPATIONAL DESCRIPTION

Grain elevator superintendents supervise and coordinate the work of those who un-load, load, store, clean, and blend grain for milling and shipping. DOT 529.137-022

HOLLAND CODE

ESC (Enterprising, Social, Conventional)

NCIS RELATED OCCUPATIONS

1370	Administrative Service Managers
1443	Farm Products Purchasing Agent
1473	Inspectors and Compliance Officers

WORK ACTIVITIES

- Inspect grain samples, check invoices, and send grain to storage bins.
- Prepare switching orders for train crews.
- Supervise unloading and transporting of grain.
- Direct processing of grain for milling.
- Keep records of grain stored and processed.
- Supervise employees and keep employee records.
- May buy and sell grain.
- May sell related products.

APTITUDES

- Be able to learn the basics of grain elevator operation and maintenance.
- Have average ability with words and numbers.
- Be able to keep records and work with exact standards and measurements.
- Have average physical coordination and use of hands and fingers.
- Have good space and form perception and sense of color.
- Be able to handle a variety of duties and work independently.
- Be able to relate to people and supervise others.

WORK SETTING

Environment

Work indoors and occasionally outdoors.

Hours

Work 40 hours a week; longer hours may be required during harvest season.

Employers

Grain elevators and subterminal elevators.

CONSIDERATIONS

- Job involves climbing, walking, reaching, and light lifting.
- Worker may be exposed to grain dust and the danger of explosions.

NEBRASKA EMPLOYMENT

Unavailable

WAGES

In Nebraska, hourly wages for grain elevator superintendents range from a low of $5.90 to a high of $8.80. Annual salaries range between $12,272 and $18,304 for all workers in this occupation in Nebraska. National salary information is unavailable for this occupation.

EMPLOYMENT GROWTH

Nebraska

Unavailable

National

Unfavorable

Factors

- The number of grain elevators is decreasing.
- Competition in this area may be strong.

PREPARATION

SKILLS

- Knowledge of grain elevator operation and management.
- Knowledge of grains and prices.
- Skills in recordkeeping.
- Mechanical skills.
- Skills in supervising others and relating to customers.

TRAINING

- Most employers prefer to hire people who have at least two years of formal training from technical schools, community colleges, and colleges and universities.
- Courses in agricultural business management and general agriculture and business will be helpful.
- A background in farming is helpful.

EDUCATIONAL PROGRAM

116	Agricultural Business and Management
124	Agricultural Services

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, biology, vocational agriculture, agribusiness, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 353.
Guide for Occupational Exploration (2nd ed., 1984), pp. 277-292.

SCHOOLS

22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21102	Chadron State College
21311	Kearney State College
22402	McCook Community College
22304	Mid-Plains Community College
22306	Northeast Community College
21715	Peru State College
22708	Southeast Community College-Beatrice Campus
21718	University of Nebraska-Lincoln
21622	Wayne State College
22205	Western Nebraska Community College-Scottsbluff Campus

7314 PUNCHING AND SHEARING MACHINE SETUP OPERATORS

OCCUPATIONAL DESCRIPTION

Punching and shearing machine setup operators set up and operate machines that cut, shape, and punch holes in metal pieces. They follow blueprints or work orders to install and adjust cutting dies and other machine attachments. After testing and adjusting machine feeds, stops, and guides, they position work pieces in the machines and start the process. Also, they are responsible for the maintenance and repair of the machines.

HOLLAND CODE

RIS (Realistic, Investigative, Social)

SPECIALTIES

Shear Setters (615.380-010)
Angle Shear Operators (615.482-010)
Duplicator Punch Operators (615.482-014)
Ironworker Machine Operators (615.482-018)
Punch Press Operators I (615.482-022)
Automatic Punch Press Operators (615.482-026)
Shear Operator I (615.482-034)
Punch Press Setters (619.380-014)

NCIS RELATED OCCUPATIONS

7339	Fabricating Machine Setup Operators
7512	Lathe and Turning Machine Operators
7513	Milling and Planing Machine Operators
7514	Punching and Shearing Machine Operators
7517	Press and Brake Machine Operators
7518	Drilling and Boring Machine Operators

WORK ACTIVITIES

- Put together, install, and line up dies in presses according to blueprints and work orders.
- Adjust length of ram stroke needed for die and gauge of work piece.
- Position piece against stops and lock into place.
- Start press, inspect pieces, and make adjustments.
- Inspect machines and make necessary repairs.

APTITUDES

- Be able to learn various steps in operating a punch-press machine.
- Have average use of words and numbers.
- Be able to notice details and space and form relationships.
- Have average physical and eye-hand coordination and finger and hand dexterity.
- Be able to do precise work accurately.
- Be able to do repeated tasks.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week; longer hours may be required.
Employers
Manufacturers; construction and farm machinery production plants; transportation equipment, electrical machinery, and fabricated metal industries; and machine and sheet metal shops.

CONSIDERATIONS

- Work area may be noisy and workers may face the danger of injury from equipment.
- Most workers are union members.

NEBRASKA EMPLOYMENT

About 450 punching and shearing machine operators are projected to be employed by 1991.

WAGES

In Nebraska, salaries for punching and shearing machine setup operators will vary according to the size and type of employer. Entry level hourly wages for workers in this occupation range between $4.90 and $6.10. Annual salaries for workers employed full time range between $10,192 and $12,688. Nationally, the average salary of metal machine tool operators is $30,388 per year.

317

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Favorable
Factors
- Competition may be strong because there are more applicants than openings.

PREPARATION

SKILLS

- Knowledge of the steps in operating a punch-press machine.
- Skills in reading blueprints and work orders.
- Skills in making precise measurements.
- Knowledge of safety regulations and procedures.
- Skills in using the tools of the trade.

TRAINING

- Most employers prefer to hire high school graduates.
- Training is given on the job and lasts from a few days to a month.
- Training in several specialty occupations may be obtained thorugh apprenticeship training.

EDUCATIONAL PROGRAM

631 Apprenticeship Training
632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include algebra, geometry, physics, shop, manufacturing, metal working, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 520 and 532.
Guide for Occupational Exploration (2nd ed., 1984), pp. 293-341.

7339 FABRICATING MACHINE SETUP OPERATORS

OCCUPATIONAL DESCRIPTION

Fabricating machine setup operators are in charge of machines used to shape and assemble metal parts. They may operate one or several machines or set up a series of machines for other workers to operate.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Ornamental Metal Workers (619.260-008)
Metal Fabricators (619.360-014)
General Machine Operators (649.685-070)

NCIS RELATED OCCUPATIONS

7314	Punching and Shearing Machine Setup Operators
7512	Lathe and Turning Machine Operators
7513	Milling and Planing Machine Operators
7514	Punching and Shearing Machine Operators
7517	Press and Brake Machine Operators
7518	Drilling and Boring Machine Operators

WORK ACTIVITIES

- Interpret blueprints and charts.
- Develop plan and order of work.
- Mark bending and cutting lines on work piece.
- Set up and operate fabricating machine.
- Design and make patterns and fixtures.
- Check work piece to see that it matches design plans.
- May put together sheet metal products.
- Maintain and repair fabricating machines.
- May train other workers.

APTITUDES

- Be able to learn fabricating methods.
- Have average use of words and numbers.
- Be able to make decisions based on facts.
- Have average physical coordination and use of hands and fingers.
- Be able to see space and form relationships.
- Be able to do precise work accurately.
- Be able to do repeated tasks.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week; may require shift work including evenings, nights, and weekends.
Employers
Manufacturing plants that produce concrete products, electrical equipment, fabricated metal products, insulated wire, and metal springs; welding shops; and automobile service departments.

CONSIDERATIONS

- Job involves lifting heavy loads, stooping, reaching, and having good eyesight.
- Workers may be exposed to fumes, noise, and accidents caused by high powered, fast moving machinery.
- Many workers belong to unions.

NEBRASKA EMPLOYMENT

About 250 fabricating machine operators are projected to be employed by 1991.

WAGES

Hourly wages for fabricating machine setup operators range between a low of $4.90 to a high of $7.10 in Nebraska. Workers employed full time earn salaries that range between $10,192 and $14,768 a year. Nationally, the average salary of metal machine tool operators is $30,388 per year. The highest entry level salaries will be paid to individuals who have completed a machine technology program.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Favorable
Factors

- Growth in population and incomes means that more machined goods and industrial products will be needed and will cause a need for these workers.

PREPARATION

SKILLS

- Knowledge of methods and machines used in fabricating.
- Knowledge of the properties of metal.
- Skills in reading blueprints and specifications.
- Skills in making accurate measurements.
- Skills in operating and repairing fabricating machines and tools.
- Skills in welding.

TRAINING

- Some people are trained on the job.
- Other employers prefer applicants who have completed an apprenticeship program.
- Formal training programs in machine technology are available at technical schools or community colleges.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include algebra, geometry, advanced math, manufacturing, shop, drafting, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 530, 564, and 829.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

7342 MOLDING AND CASTING MACHINE SETUP OPERATORS

OCCUPATIONAL DESCRIPTION

Molding and casting machine setup operators set up and operate machines to mold or cast plastic or metal materials to make objects of a particular shape. Some use equipment to heat metal or plastic to liquid form and shape it in molds. Some cast metal parts using a machine that forces molten metal into special dies. Some set up machines to compress plastic into forms or molds.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Injection Molding Machine Operators (556.382-014)
Compression Molding Machine Operators (556.682-014)
Compression Molding Machine Tenders (556.685-022)
Injection Molding Machine Tenders (556.685-038)

NCIS RELATED OCCUPATIONS

7343	Plating Machine Setup Operators
7542	Molding and Casting Machine Operators
7544	Heating Equipment Operators
87691	Foundry Workers

WORK ACTIVITIES

- Mount cores, die sections, and punches into machines.
- Check angles of dies and lock into place.
- Heat metal or plastic to liquid form.
- Turn valves and pull levers to force molten liquid into molds or dies.
- Activate cooling systems.
- May mix plastic powder to cast plastic parts.
- Remove sample casting and check machine setup.
- Maintain and repair machines.

APTITUDES

- Be able to learn molding and casting machine operations.
- Have average use of numbers.
- Be able to work within set standards and exact measurements.
- Have average physical coordination and hand and finger dexterity.
- Be able to do repetitive tasks.
- Have good space and form perception and be able to see differences in objects.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week; shift work may be required including evenings, nights, and weekends.
Employers
Manufacturers who produce electrical equipment, auto parts, and other metal or plastic parts or products.

CONSIDERATIONS

- Job involves lifting of heavy loads, stooping, reaching, and having good eyesight.
- Workers may be exposed to noise, heat, fumes, and accidents with high powered, fast moving machinery.

NEBRASKA EMPLOYMENT

About 300 molding and casting machine setup operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for molding and casting machine setup operators range between $4.90 and $7.40. The lower wages will be paid to individuals entering an apprenticeship training program, the highest salaries will go to individuals who have completed all training and have the highest level of demonstrated skill. Annual salaries for all workers in this occupation range between $10,192 and $15,392 in Nebraska. Nationally, the average salary for machile-tool operators who work on either metal or plastic materials is $30,388 per year. Salaries will also vary according to the size and geographic location of the employer.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable
National
Somewhat Favorabe
Factors

- Demand for molded parts is expected to increase, but the use of automatic machine molding will limit employment growth in this field.
- Most openings will result from replacement needs.

PREPARATION

SKILLS

- Knowledge of the operation of molding and casting machines.
- Knowledge of the qualities of plastics and metals.
- Skills in doing precise measurements.
- Skills in repairing and maintaining machines.

TRAINING

- Most employers prefer to hire high school graduates.
- Training is available on the job under the supervision of experienced workers or through apprenticeship programs.

EDUCATIONAL PROGRAM

631 Apprenticeship Training
632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, shop, manufacturing, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 407-409.
Guide for Occupational Exploration (2nd ed., 1984), pp. 293-341.

7343 PLATING MACHINE SETUP OPERATORS

OCCUPATIONAL DESCRIPTION

Plating machine setup operators are in charge of equipment to cover objects with metal and other materials. They may plate or coat objects to protect them, build them up, or make them look or work better.

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Platers (500.380-010)
Coating Machine Operators (501.362-010)
Automatic Metal Spraying Machine Operators (505.382-010)
Coaters Operators (509.382-010)

NCIS RELATED OCCUPATIONS

7342	Molding and Casting Machine Setup Operators
7542	Molding and Casting Machine Operators
7544	Heating Equipment Operators

WORK ACTIVITIES

- Study job specifications and object to be plated.
- Determine type of plating metal and thickness required.
- Prepare plating solution.
- Sandblast, scour, buff, or immerse articles in bath to clean them.
- Mask parts of object not to be plated.
- Place object in plating solution and adjust flow of current through solution.
- Remove plated objects and examine for defects.
- Polish or buff article.

APTITUDES

- Be able to learn the methods and equipment used in plating operations.
- Have average verbal and math abilities.
- Be able to make decisions based on information.
- Have average space and form perception and hand and finger dexterity.
- Be able to see slight differences in objects.
- Be able to do precise work accurately.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week.
Employers
    Manufacturers of automobiles, wires, coiled springs, silverware, jewelry, plumbing fixtures, electronic products, household appliances, cooking utensils, and carbon paper.

CONSIDERATIONS

- Job requires standing for long periods, reaching, and lifting of loads weighing up to 100 pounds.
- Workers may be exposed to toxic fumes, burns from acids, and damp working areas.

NEBRASKA EMPLOYMENT

About 150 plating machine setup operators are projected to be employed by 1991.

WAGES

In Nebraska, entry level wages range between a low of $5.90 for individuals with no experience entering an on-the-job-training program to a high of $8.20 for workers who have completed all training and can demonstrate the highest level of skill. Annual salaries in Nebraska range between $12,272 and $17,056. Nationally, salaries are only slightly lower spanning an average range of between $10,800 to $16,600 a year.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Somewhat Favorable
Factors
- Most openings will result from replacement needs not growth in this small occupation.
- Growth will be limited by the increasing automation of plating processes.

PREPARATION

SKILLS

- Knowledge of plating processes.
- Knowledge of qualities of electricity and metals.
- Skills in reading blueprints and work orders.
- Skills in using measuring instruments.

TRAINING

- Many employers prefer to hire high school graduates for this job.
- Most workers learn their skills through on-the-job training.
- Apprenticeship programs are also available.
- The American Electroplaters' Society offers basic courses in electroplating.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, chemistry, physics, drafting, shop, metal working, and electrical/electronics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 287, 289, 295, and 296.

Guide for Occupational Exploration (2nd ed., 1984), pp. 293-341.

Occupational Outlook Handbook (1990-91 ed.), p. 396.

7443 PRINTING PRESS SETUP OPERATORS

OCCUPATIONAL DESCRIPTION

Printing press setup operators are in charge of printing presses to produce printed material. They may print typeset material, engrave designs or lettering, punch holes in data cards, or print pictures or other subject matter.

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Cylinder Press Operators (651.362-010)
Platen Press Operators (651.362-018)
Web Press Operators (651.362-030)
Printers II (651.380-010)
Offset Press Operators I (651.482-010)
Military Printing Specialists (M74430)

NCIS RELATED OCCUPATIONS

4722	Duplicating Machine Operators
7444	Photoengraving and Lithographing Machine Setup Operators
7643	Printing Machine Operators

WORK ACTIVITIES

- Determine the ink and stock to be used and number of pieces to be run from work orders.
- Lock printing plates and paper into place.
- Fill ink fountains and adjust controls that guide paper and ink flow.
- Start presses and check samples for defects and needed adjustments.
- Keep careful watch on printing operations at all times.
- Clean and lubricate the press and make repairs.

APTITUDES

- Be able to learn the workings of a press and the process of printing.
- Have average use of words and numbers.
- Be able to work according to set standards.
- Have average space and form perception and hand and finger dexterity.
- Be able to make quick decisions and work under pressure.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 35 to 40 hours a week.
Employers
  Newspapers, commercial print shops, book and magazine publishers, government agencies, and colleges and universities.

CONSIDERATIONS

- Work areas are noisy and there is the danger of accidents with fast moving machines.
- Operators do considerable walking, stooping, standing, reaching, pulling, and lifting of loads up to 50 pounds.
- Many workers are members of unions.

NEBRASKA EMPLOYMENT

About 70 printing press setup operators are projected to be employed by 1991.

WAGES

Entry level wages will vary according to the amount and type of education or training completed as well as the size and location of the employer. In Nebraska, hourly wages range between a reported low of $6.20 to a high of $8.71. The average hourly wage for all workers in this occupation in Nebraska is $7.05. Annual entry level salaries for workers employed full-time range between $12,896 and $18,116. The average annual salary for full-time workers in Nebraska is $14,664. Nationally, average salaries for two-color sheet-fed press operators is $16.98 per hour and $18,06 an hour for four-color sheet-fed press operators.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors
- The amount of materials being printed is growing but presses are more automated and more efficient and require smaller press crews.

325

- Most openings will result from replacement needs in this small occupation.

PREPARATION

SKILLS

- Knowledge of the printing process and operating printing machines.
- Skills in mixing inks.
- Mechanical skills.

TRAINING

- The minimum educational requirement is high school graduation.
- Training is available through on-the-job training, apprenticeship programs, and formal course work at technical schools and community colleges.

EDUCATIONAL PROGRAM

318	Graphics and Printing
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in media production, shop, commerical and graphic arts, and computer science.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 567-568.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-218.
Occupational Outlook Handbook (1990-91 ed.), p. 418.
Military Career Guide (188-89 ed.), p. 173.

SCHOOLS

44820	Career Institute of Omaha
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21803	College of Saint Mary
21504	Concordia College
21606	Dana College
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21717	Union College
99827	Universal Technical Institute
21622	Wayne State College

7444 PHOTOENGRAVING AND LITHOGRAPHING

OCCUPATIONAL DESCRIPTION

Photoengraving and lithographing machine setup operators are in charge of machines, cameras, and other equipment used to print or transfer letters, designs, or pictures onto articles.

HOLLAND CODE

RIC (Realistic, Investigative, Conventional)

SPECIALTIES

Photoengraving Photographer (971.382-014)
Lithographic Photographer (972.382-014)

NCIS RELATED OCCUPATIONS

4722	Duplicating Machine Operators
6842	Lithographers and Photoengravers
7443	Printing Press Setup Operators
7643	Printing Machine Operators

WORK ACTIVITIES

- Read job orders and determine machine setups required.
- Use hand tools and gauges to install and adjust machine units.
- Run sample and check for defects.
- Regulate machine actions and watch printing process.
- Maintain and clean machinery and make necessary repairs.
- May load materials in machines, fill ink or other containers, mix ingredients, and keep work records.

APTITUDES

- Be able to learn the methods of setting up and operating photoengraving and lithographing equipment.
- Have average verbal and math abilities
- Be able to make decisions based on data.
- Have average physical coordination and hand and finger dexterity.
- Be able to see differences in colors and have average space and form perception.
- Be able to work within set standards and exact measurements.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours a week.
Employers
  Commercial printing plants, newspapers, book and magazine printers, government printers, and colleges and universities.

CONSIDERATIONS

- Job requires light lifting, reaching, standing long periods, and good vision to do fine, detailed work.
- Workers handle toxic chemicals and must concentrate for long periods of time.

NEBRASKA EMPLOYMENT

About 740 photoengraving and lithographing machine setup operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for photoengraving and lithographing machine setup operators range from a reported low $7.24 to a high of $11.87. Annual salaries in Nebraska span a range of $15,059 and $24,689 for workers employed full time. The average hourly wage in Nebraska for all workers in this field is $10.98. The average annual salary for all full-time workers is $22,838. Nationally, salaries vary according to the type, size and geographic location of the employer as well as the demonstrated skill of the trained worker. Experienced lithographers operating a scanner earned approximately $19.80 an hour in 1988, other workers averaged $16,00 an hour.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors
- New printing processes have reduced the need for photoengraving machine operators.

- Lithographic work cannot be easily automated; so, demand for these workers should continue.

PREPARATION

SKILLS

- Knowledge of the photoengraving and lithographing processes and machines.
- Skills in photography and developing film.
- Mechanical skills.
- Skills in reading and following job orders.

TRAINING

- High school graduation is the minimum educational requirement.
- Most workers learn their skills through on-the-job training or apprenticeship programs.
- Related coursework in printing and graphics is available from technical schools or community colleges.

EDUCATIONAL PROGRAM

318	Graphics and Printing
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should use courses in chemistry, physics, media production, art, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 935 and 937.
Guide for Occupational Exploration (2nd ed., 1984), pp. 100-107.
Occupational Outlook Handbook (1990-91 ed.), p. 414.

SCHOOLS

44820	Career Institute of Omaha
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21803	College of Saint Mary
21504	Concordia College
21606	Dana College
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21717	Union College
99827	Universal Technical Institute
21622	Wayne State College

7512 LATHE AND TURNING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Lathe and turning machine operators work machines used to grind, bore, thread, or cut metal or plastic pieces. Usually they work under direct supervision of skilled setup machine operators.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Numerical Control Lathe Operators (604.362-010)
Production Lathe Operators (604.685-026)
Threading Machine Operators (604.685-038)
Fittings Finishers (619.382-014)
Lathe Hand (700.682-014)

NCIS RELATED OCCUPATIONS

6811	Tool and Die Makers
6813	Machinists
7314	Punching and Shearing Machine Setup Operators
7339	Fabricating Machine Setup Operators
7513	Milling and Planing Machine Operators
7514	Punching and Shearing Machine Operators
7517	Press and Brake Machine Operators
7518	Drilling and Boring Machine Operators

WORK ACTIVITIES

- Clamp metal or plastic to be cut into the machine.
- Operate switches or levers to start machine.
- Bring the cutting tools against the metal to perform a series of operations.
- Remove piece that has been machined and check for accurate cuts.
- May load and unload stock from machines.
- May watch several machines at once.
- Watch for machines that need repair and report it to setup operators.
- May record production output.

APTITUDES

- Be able to learn the methods of operating various lathes and turning machines.
- Have average space and form perception, physical coordination, and hand and finger dexterity.
- Be able to do precise work accurately.
- Be able to make decisions based on facts.
- Be able to do routine and repeated work activities.
- Be able to work independently.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week.
Employers
    Manufacturers producing metal products, transportation equipment, electrical and electronic equipment, instruments, and machinery.

CONSIDERATIONS

- Job requires medium lifting of loads weighing up to 50 pounds, reaching, and good vision.
- Workers are exposed to high noise levels, but they wear earplugs to prevent hearing problems.
- High-speed machines can be dangerous if safety rules are not observed.

NEBRASKA EMPLOYMENT

About 670 lathe and turning machine operators are projected to be employed by 1991.

WAGES

Salaries for lathe and turning machine operators vary according to the size and geographic location of the manufacturer as well as the amount of completed training and demonstrated skill of the worker. In Nebraska, hourly wages for workers in this field range between $4.40 and $8.40. Annual salaries for all workers employed full time span a range between $9,152 and $17,472. National machine tool operators who work on either metal or plastic earn an average of $14.61 per hour.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors

- Most openings will result from the need to replace workers who leave this occupation.
- New processes being developed in metal working and the use of faster automatic machines will somewhat limit the growth in this occupation.

PREPARATION

SKILLS

- Skills in operating lathes and turning machines.
- Knowledge of the properties of metals and plastics.
- Knowledge of safety practices.
- Skills in making accurate measurements.
- Skills in recordkeeping.

TRAINING

- Most employers prefer to hire high school graduates.
- Most beginners learn their skills informally on the job under the supervision of experienced workers.
- Some technical schools and community colleges offer related course work in machine technology.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in shop, industrial arts, metal working, algebra, and geometry.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 502-504, 532, and 652.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.
Occupational Outlook Handbook (1990-91 ed.), p. 367.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

7513 MILLING AND PLANING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Milling and planing machine operators are in charge of machines used to cut, grind, or shape metal or plastic pieces. These machines produce a finished shape and form flat, curved, or irregular surfaces.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Production Milling Machine Operators (605.685-030)
Planing Machine Operators (605.685-034)

NCIS RELATED OCCUPATIONS

6813	Machinists
7314	Punching and Shearing Machine Setup Operators
7339	Fabricating Machine Setup Operators
7512	Lathe and Turning Machine Operators
7514	Punching and Shearing Machine Operators
7517	Press and Brake Machine Operators
7518	Drilling and Boring Machine Operators
7633	Sawing Machine Operators

WORK ACTIVITIES

- Fasten metal or plastic pieces to work surface.
- Clamp cutters into place and start machines.
- Operate levers and switches to control speed of cutters and movement of surfaces.
- Stop machines to check and measure cuts.
- Remove shaped and finished pieces.
- May send flow of coolant over cutter and pieces.
- Repeat the process.

APTITUDES

- Be able to learn to operate milling and planing machines.
- Have good physical coordination and hand and finger dexterity.
- Be able to see differences in objects and have good space and form perception.
- Be able to make decisions based on facts and information.
- Be able to do precise work accurately.
- Be able to handle routine, repetitive activities.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week
Employers
Manufactures of fabricating metal products, transportation equipment, electrical and electronic equipment, and machinery.

CONSIDERATIONS

- Job involves lifting of medium loads, standing for long periods, reaching, and having good vision.
- Workers are required to follow strict safety rules and to wear protective clothing to avoid injuries.

NEBRASKA EMPLOYMENT

About 150 milling and planing machine operators are projected to be employed by 1991.

WAGES

In Nebraska, starting salaries for milling and planing machine operators range between $8,528 and $10,192 a year. Hourly wages for workers in this occupation range between $4.10 and $4.90. Nationally, machine tool operators who work on either metal or plastic materials earn an average of $14.61 per hour.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Somewhat Favorable
Factors

- Most opening will result from replacement needs in this small occupation.

PREPARATION

SKILLS

- Skills in operating milling and planing machine operators.
- Skills in making precise measurements.
- Knowledge of the properties of metal and plastic.
- Knowledge of safety practices.

TRAINING

- Most employers prefer to hire high school graduates.
- Most beginners learn their skills informally on the job.
- Related course work in machine technology is available at technical schools and community colleges.
- Training in several related occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects include courses in algebra, geometry, shop, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 507.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

7514 PUNCHING AND SHEARING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Punching and shearing machine operators are in charge of machines that make holes in metal and cut metal by the action of a cutting tool.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Punch Press Operators II (615.685-030)
Shear Operators II (615.685-034)

NCIS RELATED OCCUPATIONS

6813	Machinists
7314	Punching and Shearing Machine Setup Operators
7339	Fabricating Machine Setup Operators
7512	Lathe and Turning Machine Operators
7513	Milling and Planing Machine Operators
7517	Press and Brake Machine Operators
7518	Drilling and Boring Machine Operators

WORK ACTIVITIES

- Place workpiece on machine bed manually or with hoist.
- Position piece under die or against guides.
- Start punch press or shear blade.
- Inspect parts visually or with fixed gages.
- Repeat process.
- May clean dies or shears.

APTITUDES

- Be able to learn to operate punching and shearing machines.
- Have good manual dexterity and space and form perception.
- Be able to do precise work accurately.
- Be able to make decisions based on facts.
- Be able to do routine, repetition activities.

WORK SETTING

Environment
- Work indoors.

Hours
Work 40 hours a week.

Employers
Manufacturers of fabricated metal products, transportation equipment, plastic products, electrical equipment, and machinery.

CONSIDERATIONS

- Job involves lifting of heavy loads, reaching, standing for long periods, and having good vision.
- Workers wear safety glasses, earplugs, and follow safety rules to avoid dangers from noise and accidents.

NEBRASKA EMPLOYMENT

About 450 punching and shearing machine operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for punching and shearing machine operators range between a low of $4.90 to a high of $7.00. Annual salaries for workers employed full time range between $10,192 and $14,560. Nationally, metal machine tool operators earn an average of $14.61 per hour.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Somewhat Favorable
Factors
- Most openings will result from replacement needs in this small occupational group.

PREPARATION

SKILLS

- Skills in operating punching and shearing machines.
- Skills in making precise measurements.
- Knowledge of safety practices.
- Knowledge of the properties of metal and plastics.

TRAINING

- Most employers prefer to hire high school graduates.
- Beginners usually learn their skills on the job under supervision of experienced workers.
- Related course work in machine technology is available from technical schools and community colleges.
- Training in several related occupations may be obtained thorugh apprenticeship training.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, shop and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 521.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

7517 PRESS AND BRAKE MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Press and brake machine operators are in charge of machines that cut, punch, or stamp articles of various shapes and sizes from sheets or blocks of materials or that bend, form, roll, arc, or straighten metal sheets, plates, and bars.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Power Press Tenders (617.685-026)
Brake Operators II (619.685-026)

NCIS RELATED OCCUPATIONS

6813	Machinists
7314	Punching and Shearing Machine Setup Operators
7339	Fabricating Machine Setup Operators
7512	Lathe and Turning Machine Operators
7513	Milling and Planing Machine Operators
7514	Punching and Shearing Machine Operators
7518	Drilling and Boring Machine Operators

WORK ACTIVITIES

- Position work against guides or on machine bed and clamp into place.
- Brush oils on dies and workpiece.
- Start machine to lower ram and shape piece or to force die through piece.
- Inspect work using gages or templates.
- Clean dies or rams.
- May preheat metal before bending.
- May repair machines.

APTITUDES

- Be able to learn to operate press and brake machines.
- Have average math skills.
- Be able to detect differences in shape, size, and texture in objects.
- Have average physical coordination and hand and finger dexterity.
- Be able to do precise work accurately.
- Be able to do routine, repetitive activities.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week.
Employers
Manufacturers of ammunition, firearms, metal parts, furniture, fabricated metal products, transportation equipment, and machinery.

CONSIDERATIONS

- Job involves lifting of medium loads, reaching, and having good vision.
- Operators work around machines that may be noisy and hazardous.

NEBRASKA EMPLOYMENT

About 370 press and machine operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly waes for press and brake machine operators range between $4.90 and $7.10. Annual salaries for workers employed full time range between $10,192 and $14,768. Salaries vary according to the competed training and experience of the worker as well as the size and location of the manufacturer. Nationally, machine tool operators who work on metal materials earn an average of $14.61 per hour.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable
National
Somewhat Favorable
Factors
- Most job openings will result from the need to replace workers who leave this occupation.

PREPARATION

SKILLS

- Skills in operating press and brake machines.
- Skills in making precise measurements.

- Knowledge of safety practices.
- Knowledge of properties of metals.

TRAINING

- The minimum educational requirement is usually a high school diploma.
- Most learn their skills informally on the job under supervision of experienced workers.
- Technical schools and community colleges offer related course work in machine technology.
- Training in several related occupations may be obtained thorugh apprenticeship training.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, shop, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 529 and 534.

Guide for Occupational Exploration (2nd ed, 1984), pp. 293-341.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

7518 DRILLING AND BORING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Drilling and boring machine operators are in charge of machines that drill, enlarge, or tap holes in metal objects. The machines pierce metal by means of rotary cutting tools advanced into the material to make, enlarge, or thread holes.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Drill Press Operators (606.682-014)
Production Boring Machine Operators (606.685-010)
Production Drill Press Operators (606.685-026)

NCIS RELATED OCCUPATIONS

6813	Machinists
7314	Punching and Shearing Machine Setup Operators
7339	Fabricating Machine Setup Operators
7512	Lathe and Turning Machine Operators
7513	Milling and Planing Machine Operators
7514	Punching and Shearing Machine Operators
7517	Press and Brake Machine Operators

WORK ACTIVITIES

- Lift workpiece into place manually or with a hoist.
- Secure the piece on the machine bed with clamps.
- Start machine, engage automatic feed, and put cutting, drilling, or boring tool into place.
- Direct flow of coolant or oils to area.
- Inspect and measure piece for conformance to specifications.
- Change worn machine parts and sharpen cutting tools.
- May adjust cutting speeds, feed rates, and depth of cuts.
- May perform minor assembling.

APTITUDES

- Be able to learn to operate drilling and boring machines.
- Have average physical coordination and hand and finger dexterity.
- Be able to make decisions based on facts.
- Be able to do precise work accurately.
- Be able to do routine, repetitive activities.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week.
Employers
Manufacturers of ammunition, firearms, fabricated metal products, transporation equipment, machinery, and plastic products.

CONSIDERATIONS

- Job involves lifting of medium loads, standing for long periods, reaching, and having good vision.
- Workers must wear safety glasses and earplugs and follow safety rules.
- Work areas may be hot, dusty, and noisy.

NEBRASKA EMPLOYMENT

About 290 drilling and boring machine operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for drilling and boring machine operators range from a low of $4.90 to a high of $7.60. Wages will vary according to the amount and type of training completed as well as the size and geographic location of the manufacturer. Annual salaries for workers employed full time span a range of between $10,192 and $15,808. Nationally, machine operators who work on metal materials earn an anverage of $14.61 per hour.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable

National
Somewhat Favorable
Factors
- Most openings will result from replacement needs.

PREPARATION

SKILLS

- Skills in operating drilling and boring machines.
- Skills in making precise measurements.
- Knowledge of safety practices.
- Knowledge of the properties of plastics and metals.

TRAINING

- Most employers prefer to hire high school graduates.
- Beginners usually learn their skills informally on the job.
- Related coursework in machine technology is available at technical schools and community colleges.
- Training in several related occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, shop, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 509.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

7542 MOLDING AND CASTING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Molding and casting machine operators are in charge of machines used to mold or cast metal, plastic, or glass products. The products include bullets, glass tubes, iron billets, contact lenses, and a variety of other products. Also, they may control equipment used to heat, melt, or cure materials before they are molded or cast.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Automatic Casting Machine Operators (502.482-014)
Mold Makers (518.664-010)
Machine Molders (518.682-010)
Compression Molding Machine Tenders (556.685-022)
Injection Molding Machine Tenders (556.685-038)

NCIS RELATED OCCUPATIONS

6811	Tool and Die Makers
7342	Molding and Casting Machine Setup Operators
7343	Plating Machine Setup Operators
7544	Heating Equipment Operators
87691	Foundry Workers

WORK ACTIVITIES

- Prepare casting frame or molding box.
- Seal frame, box, or mold after adding cores.
- Pour molten metals, plastics, or glass into cavity.
- Add coolants or water to cores if necessary.
- Remove castings, cores, and patterns when substances are cool and solidified.
- May trim excess material from the final shape.
- May weigh and mix materials.
- May test or measure finished products.

APTITUDES

- Be able to learn the casting and mold making processes.
- Have average physical coordination and hand and finger dexterity.
- Be able to see slight differences in objects.
- Be able to handle repetitive, routine tasks.
- Be able to do precise work accurately.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week.
Employers
Foundries, steel companies, manufacturers of metal parts, silverware, transporation equipment, phonograph records, plumbing fixtures, and nails.

CONSIDERATIONS

- Job requires lifting of medium loads weighing up to 50 pounds.
- The injury rate in this field is higher than the average for all manufacturing industries because of the possibilities of burns from hot metals, cuts and bruises, from metal cutting tools, and working around heavy and fast-moving machinery.

NEBRASKA EMPLOYMENT

About 60 molding and casting machine operators are projected to be employed by 1991.

WAGES

Hourly wages for molding and casting machine operators in Nebraska range between a reported low of $4.90 and a high of $6.20. Annual salaries for workers employed full time range between $10,192 and $12,896. Nationally machine tool operators who work on metal or plastic materials earn an average of $14.61 per hour.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Unfavorable

Factors

- Foreign competition and the use of automatic machine molding limit employment opportunities.
- Most job openings will result from the need to replace workers and will probably be in the plastics molding industries.

PREPARATION

SKILLS

- Knowledge of the casting and molding processes.
- Knowledge of the characteristics of the materials molded.
- Skills in operating equipment and using hand tools.
- Skills in making precise measurements.

TRAINING

- Many employers prefer to hire workers who have completed high school.
- Most workers learn their skills through informal on-the-job training.
- Apprenticeship programs are available in a few locations.
- Related coursework is available at technical schools and community colleges.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, chemistry, shop, industrial arts, drafting, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 290, 308, 408, and 409.

Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

7544 HEATING EQUIPMENT OPERATORS

OCCUPATIONAL DESCRIPTION

Heating equipment operators control furnaces used to harden, refine, or strengthen metal objects or to melt ore or metal.

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Furnace Operators (512.362-018)

NCIS RELATED OCCUPATIONS

7342	Molding and Casting Machine Setup Operators
7343	Plating Machine Setup Operators
7542	Molding and Casting Machine Operators

WORK ACTIVITIES

- Weigh out metal and load into furnace.
- Turn valves and controls to regulate heat in furnace.
- Watch metal and instruments and adjust controls to maintain temperature.
- Bring impurities to surface of melted metal and skim them off.
- Use hoist to remove melted metal from furnace.
- Test sample of metal and record data from each melt.

APTITUDES

- Be able to learn the methods of tending and operating a furnace.
- Have average physical coordination, use of hands, and eye-hand coordination.
- Be able to make decisions based on data.
- Be able to see slight differences in objects.
- Be able to do precise work accurately.

WORK SETTING

Environment
  Work indoors; work areas may be vary warm.
Hours
  Work 40 hours a week.
Employers
  Foundries, shops with forges, manufacturers of metal products, and iron and steel mills.

CONSIDERATIONS

- Workers are exposed to heat, smoke, fumes, and hazards although these have been reduced by modern equipment and safety devices.
- Job requires light lifting, shoveling, and reaching.
- Many workers belong to unions.

NEBRASKA EMPLOYMENT

About 110 heating equipment operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for heating equipment operators range between a reported low of $5.90 and a high of $6.80. Annual salaries for workers employed full time range between $12,272 and $14,144. Nationally, heating equipment operators earn an average of $14.72 an hour.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Unfavorable
Factors
- Foreign competition and automated processes has limited job opportunities.
- Most openings will result from replacement needs in this very small occupational group.

PREPARATION

SKILLS

- Knowledge of furnace operations and of the properties of metals.
- Skills in using controls, hoists, handle ladles, and scales.
- Skills in recording data.
- Knowledge of safety procedures.

TRAINING

- Some employers require a high school diploma.
- Most workers start in unskilled jobs and through on-the-job training and experience acquire the skills necessary to become furnace operators.
- Some technical schools and community colleges offer related course work.
- Apprenticeship programs are also available.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, advanced math, physical science, chemistry, physics, drafting, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 302-303.
Guide for Occupational Exploration (2nd ed., 1984), pp. 293-341.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

7633 SAWING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Sawing machine operators are in charge of machines used to saw wood to size or to make parts or products. They may cut, surface, shape, and join wood according to specifications.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Stock Graders (667.382-010)
Trimmer Sawyers (667.482-022)
Head Sawyers (667.682-010)
Cut-Off Saw Operators (667.682-022)
Jigsaw Operators (667.682-042)
Buzzsaw Operators (667.685-026)

NCIS RELATED OCCUPATIONS

7513	Milling and Planing Machine Operators
8710	Construction Laborers

WORK ACTIVITIES

- Examine stock for defects and determine best cuts to be made.
- Measure and mark wood to be cut.
- Adjust machine stops, guides, and blades before each sawing operation.
- Press controls to operate machines and advance or position the stock.
- May guide stock into cutting teeth by hand.
- May unload, sort, stack, and measure wood stock.
- May sharpen or replace worn saw blades.

APTITUDES

- Be able to learn the methods of operating sawing machines.
- Have average physical coordination and use of hands.
- Be able to see details in objects.
- Be able to do precise work accurately.
- Be able to handle repetitive, routine activities.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week.
Employers
    Manufacturers of wood products, milling plants, and lumber yards.

CONSIDERATIONS

- Job requires lifting of medium loads weighing up to 50 pounds, reaching, and carrying long lengths of lumber.
- Work surroundings are often noisy and dusty.
- Working with sharp sawing instruments creates a risk of a bodily injury.

NEBRASKA EMPLOYMENT

About 110 sawing machines operators are projected to be employed by 1991.

WAGES

Entry level wages for sawing machine operators vary according to the amount of training completed and the demonstrated skill and experience of the worker. Hourly wages will range from a low of $3.90 for workers with no experience entering an on-the-job-training program to a high of $6.60 an hour for those workers who have completed training and have some experience. Entry level annual salaries for all workers employed full time range between $8,112 and $13,728 a year. Nationally, salaries range between $8,320 and $21,840 a year. Millworkers in the northeast United States will earn the highest wages.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Unfavorable
Factors
- Labor saving machinery will make it possible to process more lumber with fewer employees.

- The use of products in place of wood has decreased the demand for these employees.

PREPARATION

SKILLS

- Knowledge of how to operate various power saws.
- Knowledge of the qualities of different woods.
- Skills in making accurate measurements.
- Knowledge of safety practices.

TRAINING

- Many employers prefer to hire people who have completed high school.
- Most sawing machine operators learn their skills on the job under the supervision of an experienced worker.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631 Apprenticeship Training
632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, shop, industrial arts, and woodworking.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 586-587.
Guide for Occupational Exploration (2nd ed., 1984), pp. 293-341.

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7642 TYPESETTING AND COMPOSING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Typesetting and composing machine operators are in charge of machines to prepare material to be printed in publications such as newspapers and magazines. Some oper-ate keyboard machines to assemble and set type. Other machines produce coded paper tapes or films used to prepare type.

HOLLAND CODE

RCI (Realistic, Conventional, Investigative)

SPECIALTIES

Linotype Operators (650.582-010)
Photocomposing Machine Operators (650.582-018)
Phototypesetter Operators (650.582-022)
Photolettering Machine Operators (652.585-010)

NCIS RELATED OCCUPATIONS

4624 Typists
47931 Electronic Typesetting Machine Operators

WORK ACTIVITIES

- Prepare machine by setting margins, installing banks of keys, and paper strips if needed.
- Read copy and press keys to select letters to be assembled into words.
- Select sizes and styles of type desired.
- Prepare copy for proofing.
- May operate machines to transfer print to film and expose film.
- May have to provide routine maintenance on machines.

APTITUDES

- Be able to learn to operate typesetting and composing machines.
- Have average use of words and numbers.
- Be able to make decisions based on data.
- Have average physical coordination, hand and finger dexterity, and space and form perception.
- Be able to do precise work accurately.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week.
Employers
    Commerical printing firms, educational institutions, government agenices, newspaper and magazine publishers, and large businesses with printing departments.

CONSIDERATIONS

- Job involves light lifting, reaching, seeing well, and sitting for long periods of time.

NEBRASKA EMPLOYMENT

About 200 typesetting and composing machine operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for typesetting and composing machine operators range from a reported low of $6.60 to a high of $9.00. Annual salaries for workers employed full time range between $13,728 and $18,720. Nationally, annual salaries range from $9,776 to $30,600 per year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- Increased use of more efficent and less expensive methods of typesetting has reduced opportunities in this occupation.

PREPARATION

SKILLS

- Knowledge of how to operate typesetting and composing machines.
- Skills in typing accurately and quickly.
- Skills in proofreading.

TRAINING

- Most employers prefer to hire people who have completed high school.
- Many operators learn their skills informally on the job under the supervision of an experienced worker.
- Related coursework in printing technology is available from technical schools and community colleges and may be helpful in getting a job.
- Training in several specialty occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

318	Graphics and Printing
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in typing, data processing, office education, and commercial and graphic art.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 566 and 570.
Guide for Occupational Exploration (2nd ed., 1984), pp. 470-473.
Occupational Outlook Handbook (1990-91 ed.), p. 412.

SCHOOLS

44820	Career Institute of Omaha
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21803	College of Saint Mary
21504	Concordia College
21606	Dana College
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21717	Union College
99827	Universal Technical Institute
21622	Wayne State College

7643 PRINTING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Printing machine operators tend machines used to print information or designs on other products. Also, they may copy, proof, or assemble printed matter.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Offset Duplicating Machine Operators (651.682-014)
Offset Press Operators II (651.685-018)
Platen-Press Feeders (651.685-022)

NCIS RELATED OCCUPATIONS

6844	Bookbinders
7443	Printing Press Setup Operators
7444	Photoengraving and Lithographing Machine Setup Operators

WORK ACTIVITIES

- Mix inks and other chemicals and load into machines with paper and other materials.
- Prepare plates and rollers.
- Set controls for size and thickness of paper, center printed impression, and regulate flow of ink and paper.
- Print a sample and check for defects.
- Watch the machine as it prints.
- Clean and lubricate presses.
- May operate collator, folding machine, stapler, and paper cutting machine.

APTITUDES

- Be able to learn the methods of operating printing machines.
- Have average use of words and numbers.
- Be able to see important details and visualize space and form relationships.
- Have average coordination and use of hands.
- Be able to make decisions based on information.
- Be able to work quickly and accurately within set standards.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; shift work including evenings and weekends is required by some employers.
Employers
    Government agencies, commercial printing firms, educational institutions, businesses and organizations with printing departments, newspaper and magazine publishers, and manufacturers that print packaging materials.

CONSIDERATIONS

- Press rooms are noisy and workers often wear ear protectors.
- Job requires light lifting, reaching, and long periods of standing.

NEBRASKA EMPLOYMENT

About 690 printing machine operators are projected to be employed by 1991.

WAGES

Hourly wages for printing machine operators range from a reported low of $8.20 to a high of $12.10. Annual salaries in Nebraska range between $17,056 and $25,168. Salaries vary according to the amount and type of training completed, demonstrated skill and union affiliation of the worker. The size and location of the employer will also effect the salary level. Nationally, hourly salariesaverage from $16.98 to $18.06 depending on experience and the type of press being operated.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable

Factors

- The outlook depends on the demand for printed materials and new printing technology. The development of faster, more efficient presses reduces the need for additional operators.

PREPARATION

SKILLS

- Knowledge of how to operate printing machines.
- Skills in proofreading and spelling and grammar.
- Mechanical skills.

TRAINING

- Most employers prefer to hire high school graduates.
- Most printing machine operators learn their skills on the job under the supervision of experienced operators.
- Related coursework is available at technical schools and community colleges.
- Training in specialty and related occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

318	Graphics and Printing
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in grammar, composition, chemistry, industrial arts, typing, data processing, and commercial/graphic art.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 568-569.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.
Occupational Outlook Handbook (1990-91 ed.), p. 416.

SCHOOLS

44820	Career Institute of Omaha
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
21803	College of Saint Mary
21504	Concordia College
21606	Dana College
21311	Kearney State College
22803	Metropolitan Community College
22304	Mid-Plains Community College
99830	Omaha Opportunities Industrialization Center, Inc.
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21717	Union College
99827	Universal Technical Institute
21622	Wayne State College

7655 SEWING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Sewing machine operators are in charge of machines used to sew together materials. They make items such as clothing, quilts, upholstery, art goods, toys, or similar products. They may perform one or more sewing operations and work with textiles such as wool, cotton, synthetic fibers, leather, and plastic.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Upholstery Sewers (780.682-018)
Sewing Machine Operators (787.682-046)

NCIS RELATED OCCUPATIONS

6844	Bookbinders
6852	Tailors and Dressmakers
6853	Upholsterers
6854	Leather Workers and Repairers

WORK ACTIVITIES

- Select correct size, color, and type of thread.
- Thread the machine, place bobbin in machine, adjust thread tension, and raise presser foot.
- Position materials and lower presser foot.
- Run machine, regulate sewing speed, and guide material under needle.
- Complete operation, raise presser foot, and remove materials.
- May cut off excess threads and trim completed sections.

APTITUDES

- Be able to learn to operate a sewing machine.
- Have average use of words and numbers.
- Be able to do repetitive, routine tasks.
- Have average physical coordination, hand and finger dexterity, sense of color, and eye-hand coordination.
- Be able to do precise work accurately and quickly.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; shift work including evenings and weekends is often required.
Employers
    Manufacturers of clothing, vehicle interiors, leather goods, toys, and camping equipment, tailoring and dressmaking shops, and dry cleaning businesses.

CONSIDERATIONS

- Surroundings may be noisy and dusty.
- Sewers may sit for long periods of time.
- Workers may be exposed to cuts and punctures from sharp needles.
- Most of these workers are paid by the production piece and are members of labor unions.

NEBRASKA EMPLOYMENT

About 1,380 sewing machine operators are projected to be employed by 1991.

WAGES

In Nebraska entry level hourly wages for sewing machine operators range between a reported low of $3.80 to a high of $5.70. Annual wages for workers employed full time range between $7,904 and $11,856. Nationally, the median yearly wage for sewing machine operators is $10,000. The highest salaries will be earned by workers with experience, union affiliation and employed in a major metropolitan area.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Unfavorable
Factors
- Employment outlook has been influenced by foreign competition and the trend toward using cheap, immigrant labor.

PREPARATION

SKILLS

- Knowledge of how to operate a sewing machine.
- Knowledge of fabrics and their characteristics.
- Skills in doing accurate work quickly.

TRAINING

- Most employers prefer to hire high school graduates.
- Training is usually given on the job by experienced workers.
- Previous sewing experience or participation in related course work in high school, technical schools or community colleges may be helpful.
- Training in related occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

395	Textiles and Clothing
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in art, home economics, and clothing and textiles.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 772 and 790.
Guide for Occupational Exploration (2nd ed., 1984), pp. 293-341.

SCHOOLS

22307	Central Community College-Platte Campus
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln

7657 PRESSING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Pressing machine operators use machines to press garments and other textile products. To flatten seams and shape garments, they use steam presses and other machines. Some specialize in pressing particular garment parts such as collars while others work on a certain type of garment such as shirts. Their duties vary from simple smoothing of cloth to skillful shaping of garment parts.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Machine Pressers (363.682-018)
Hat Blockers (363.684-014)
Seam Pressers (583.685-098)

NCIS RELATED OCCUPATIONS

7658 Laundering and Dry Cleaning Machine Operators

WORK ACTIVITIES

- Arrange garments on padded machine table.
- Lower pressing heads or position iron.
- Operate hand levers or foot pedals to release steam and apply pressure to garments.
- Rearrange item and repeat process until pressing is complete.
- Fold garments or place on hangers.

APTITUDES

- Be able to learn to operate pressing machines.
- Have average physical coordination and use of hands and fingers.
- Be able to handle routine, repetitive tasks.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week.
Employers
Nursing homes; hospitals; hotels and motels; schools; laundry and dry cleaning businesses; and manufacturers of clothing, drapes, slipcovers, and other similar items.

CONSIDERATIONS

- Job involves lifting of loads up to 50 pounds, stooping, reaching, and standing.
- Work areas are often hot, humid, and noisy.
- Operators may be subject to burns.

NEBRASKA EMPLOYMENT

About 390 pressing machine operators are projected to be employed by 1991.

WAGES

In Nebraska entry level hourly wages for pressing machine operators range from a reported low of $4.10 to a high of $5.10. Annual salaries for full-time workers range between $8,528 and $10,608 a year. Nationally, the median yearly wage for pressing machine operators is $9,900.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable
National
Favorable
Factors
- The demand for professional laundry and dry cleaning services has increased.
- This occupation usually has a high turnover rate.

PREPARATION

SKILLS

- Knowledge of how to operate pressing machines.
- Knowledge of textiles and their qualities.
- Skills in using various types of irons.

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TRAINING

- Pressing machine operators learn their skills on the job over a period of a few weeks.
- Training as a Hat-Block Maker may be obtained thorugh apprenticeship training.

EDUCATIONAL PROGRAM

631 Apprenticeship Training
632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in home economics and clothing and textiles.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 246 and 465.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.

7658 LAUNDERING AND DRY CLEANING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Laundering and dry cleaning machine operators tend machines that launder, dye, or dry-clean clothing, rugs, and linens. They may operate one or several machines. Also, they may iron, fold, or patch articles. Some specialize in cleaning items such as furs, feathers, or leather garments.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Machine Washers (361.665-010)
Hand Launderers (361.684-010)
Laundry Workers II (361.685-018)
Dry Cleaners (362.382-014)
Leather Cleaners (362.684-026)

NCIS RELATED OCCUPATIONS

7657 Pressing Machine Operators

WORK ACTIVITIES

- Inspect articles; note damage and stains; check pockets; remove buttons and trim.
- Attach customers identification tags.
- Sort items and apply spot and stain removers.
- Place articles into machines; set controls; add cleaning solutions.
- Remove articles and place in drying machines.
- May remove stains and spots from material.
- May make alternations and repairs.
- May restore cleaned articles to original appearance.
- May wait on customers and figure bills.

APTITUDES

- Be able to learn the processes used in laundering and dry cleaning.
- Have average use of words and numbers.
- Be able to do routine, repetitive work.
- Have average use of hands and physical coordination.
- Be able to make decisions based on data and observation.
- Have good color vision.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; may be opportunity for part-time work.
Employers
    Nursing homes, hospitals, hotels and motels, schools, laundromats, and dry cleaning shops.

CONSIDERATIONS

- Work surroundings may be noisy, wet, hot, and humid.
- Workers may have to lift medium loads weighing up to 50 pounds.

NEBRASKA EMPLOYMENT

About 1,450 laundry and dry cleaning machine operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for laundering and dry cleaning machine operators range between a reported low of $4.38 to a high of $6.51. Annual salaries for workers employed full-time range between $9,110 and $13,540. Nationally, salaries span a wide range between $7,500 and $18,000 a year.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Favorable
Factors
- Most openings are the result of replacement needs in this occupation that has a high turnover rate.
- Employment outlook is influenced by the use of natural fabrics, improved technology in dry cleaning, more women in the labor force, and the increased demand for laundry services by industry.

PREPARATION

SKILLS

- Knowledge of the processes involved in laundering and dry cleaning.
- Knowledge of the different kinds of fabrics.
- Skills in sewing and making alterations.
- Knowledge of cleaning solvents, soaps, and detergents.

TRAINING

- High school graduation is preferred by most employers.
- Most beginners learn their job skills informally on the job under the supervision of experienced workers.
- Some apprenticeship programs are available for dry cleaners.

EDUCATIONAL PROGRAM

395	Textiles and Clothing
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math and clothing and textiles.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 244 and 245.
Guide for Occupational Exploration (2nd ed., 1984), pp. 293-341 and 356-442.

SCHOOLS

22307	Central Community College-Platte Campus
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln

7662 PACKAGING AND FILLING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Packaging and filling machine operators tend machines used to fill articles with materials or to package products. They may fill medicine capsules or stuffed toys or they may package food products.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Stuffing Machine Operators (732.685-034)
Bundle Tiers and Labelers (920.585-010)
Feed Weighers (920.685-058)
Machine Packagers (920.685-078)

NCIS RELATED OCCUPATIONS

8761 Hand Packers and Packagers

WORK ACTIVITIES

- Adjust machines for various sizes.
- Dump materials into hoppers.
- Set machine operations by turning valves and pressing buttons.
- Watch machine operations.
- Detect problems and clear machine jams.
- Unload materials from machines.
- Check finished products for defects and weigh packaged materials.
- Keep production records.
- Clean and repair machinery.

APTITUDES

- Be able to learn the methods of tending a packaging or filling machine.
- Have average physical coordination and use of hands.
- Be able to do routine, repetitive activities.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week; may require shift work including evenings and weekends.
Employers
Meat packing plants; wholesale distributors; food processing plants; and manufacturers of tools, electrical equipment, medical equipment, medicines, paper and plastic goods, sports equipment, toys, and games.

CONSIDERATIONS

- Job involves lifting of loads weighing to 50 pounds, reaching, and having good vision.

NEBRASKA EMPLOYMENT

About 2,080 packaging and filling machine operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for packaging and filling machine operators range between a reported low of $5.80 and a high of $8.70. Annual salaries for workers employed full time in Nebraska range between $12,064 and $18,096. Nationally, salaries span a range between $12,000 and $20,000 a year.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Somewhat Favorable
Factors
- Most openings will be from the need to replace those who leave this occupation.
- The turnover rate in this large occupational area is high.

PREPARATION

SKILLS

- Knowledge of how to operate packaging and filling machines.
- Mechanical skills.
- Skills in keeping records.

TRAINING

- Operators are trained on the job under the supervision of an experienced worker.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in manufacturing, shop, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 718, 892, and 894-895.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.

7664 MIXING AND BLENDING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Mixing and blending machine operators are in charge of machines used to mix or blend ingredients to make materials such as paint, candy, dough, cheese, animal feed, mortar, sausage, or chemicals.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Batter Mixers (520.685-010)
Feed Mixers (520.685-098)
Mixers Operators (520.685-142)
Blenders (540.462-010)
Chemical Mixers (550.485-010)
Cement Mixers (550.685-026)

NCIS RELATED OCCUPATIONS

8618 Machine Operator Helpers

WORK ACTIVITIES

- Measure and weigh ingredients according to work orders, charts, or formulas.
- Pour or load ingredients into machines.
- Start machines and watch their operation to detect problems.
- Check gauges and meter readings and move controls to regulate machine actions.
- Inspect and clean equipment.
- Test materials.
- Keep records of ingredients used.

APTITUDES

- Be able to learn to operate mixing and blending machines and to learn the processes of blending and mixing ingredients.
- Have average use of words and numbers.
- Be able to do routine, repetitive tasks accurately.
- Have average use of hands and physical coordination.

WORK SETTING

Environment
 Work indoors.
Hours
 Work 40 hours a week; work may be seasonal with longer hours required during busy season.
Employers
 Food processing plants; bakeries; grain and feed mills; meat packing plants; and manufacturers of building materials, chewing gum, glue, paper and pulp, and plastic materials.

CONSIDERATIONS

- Job may require lifting of heavy loads weighing up to 100 pounds.
- Work areas may be dusty and may not be heated or air conditioned.

NEBRASKA EMPLOYMENT

About 1,130 mixing and blending machine operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for mixing and blending machine operators range between a reported low of $4.30 to a high of $8.30. Annual salaries for workers employed full time range between $8,944 and $17,264. Nationally, salaries span a wide range between $12,000 and $20,000 a year.

EMPLOYMENT GROWTH

Nebraska
 Somewhat Favorable
National
 Somewhat Favorable

PREPARATION

SKILLS

- Knowledge of the processes of blending and mixing materials.
- Knowledge of how to operate blending and mixing machines.
- Skills in keeping records.

- Skills in following written directions and in measuring ingredients.
- Mechanical skills.

TRAINING

- Most workers learn their skills informally on the job from experienced workers.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects that would be helpful will vary with the materials being produced but courses in shop and accounting would be useful.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 317, 319, 377, 386, and 389.
Guide for Occupational Exploration (2nd ed., 1984), pp. 293-341 and 356-442.

7669 PAINTING MACHINE OPERATORS

OCCUPATIONAL DESCRIPTION

Painting machine operators tend machines used to coat, paint, or spray objects. They work in a variety of industries. For example, they may coat candy with syrup, coat paper with sizing solutions, or paint airplanes or cars.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Coating Machine Operators (524.382-010)
Waxing Machine Operators (534.482-010)
Machine Sprayers (599.685-094)
Dippers (590.685-022)
Transportation Equipment Painters (845.381-014)

NCIS RELATED OCCUPATIONS

6115	Automobile Body Repairers
6442	Painters
8618	Machine Operator Keepers

WORK ACTIVITIES

- Follow work orders to install machine attachments and adjust settings.
- Mix paints or coating solutions.
- Fill machine units with coating solutions.
- Start machines and conveyors and paint objects.
- Weigh coated objects or measure thickness of coated objects.
- Keep records of production.

APTITUDES

- Be able to learn to operate painting machines.
- Have average use of words and numbers.
- Be able to do precise work accurately and quickly.
- Have average physical coordination and use of hands.
- Be able to do repetitive, routine activities.
- Have good space and form and color perception.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; shift work may be required including evenings and weekends.
Employers
    Manufacturers of metal products, automobiles, machinery, toys, furniture, and appliances.

CONSIDERATIONS

- Job involves lifting of medium loads weighing up to 50 pounds, bending, stooping, and reaching.
- Workers may wear protective goggles, shields, breathing masks, and coveralls as protection from fumes and solutions.

NEBRASKA EMPLOYMENT

About 270 painting machine operators are projected to employed by 1991.

WAGES

Wages for painting machine operators vary according to the type and size of the industry where employed and the amount of training completed by the worker. In Nebraska, hourly wages range from a reported low of $7.50 to a high of $8.70. Annual salaries in Nebraska range between $15,600 and $18,096. Nationally, salaries span a wide range between $12,700 and $31,460 a year.

EMPLOYMENT GROWTH

Nebraska
    Somewhat Favorable
National
    Favorable
Factors
- Many openings will result from the need to replace workers.
- The turnover rate in this occupational group is relatively high.
- Industries using production painters are sensitive to the ups and downs in the economy.

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PREPARATION

SKILLS

- Knowledge of how to operate painting machines.
- Knowledge of paints and coating solutions.
- Skills in making accurate measurements or weigh ins.
- Skills in keeping records.
- Skills in matching colors.

LICENSING OR CERTIFICATION

- Auto painters may be certified by the National Institute for Automotive Service Excellence, but it is not required.
- To be certified, a person must complete two years of work experience and pass a written exam.

TRAINING

- The minimum educational requirement is usually completion of high school.
- Many painting machine operators learn their skills on the job taking up to four years to become skilled in all aspects of the work.
- Apprenticeship training is available.
- Related course work in autobody repair at a technical school or community college may be helpful.

EDUCATIONAL PROGRAM

278	Vehicle & Mobile Equipment Mechanics
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, shop, industrial arts, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 342, 372, 481, 484, and 849.

Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.

Occupational Outlook Handbook (1990-91 ed.), p. 430.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
99827	Universal Technical Institute
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

7714 WELDERS

OCCUPATIONAL DESCRIPTION

Welders use hand-held welding equipment and torches to join or cut metal or plastic parts. They do such things as fuse plastic sheets, weld metal parts, or trim metal from objects. They may work in a shop, on an assembly line, or at construction sites.

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Arc Welders (810.384-014)
Gas Welders (811.684-014)
Welder-Fitters (819.361-010)
Combination Welders (819.384-010)
Production Line Welders (819.684-010)
Military Welders (M77140)

NCIS RELATED OCCUPATIONS

6115	Automobile Body Repairers
6473	Structural Metal Workers
6814	Boilermakers
6824	Sheet Metal Workers

WORK ACTIVITIES

- Study blueprints and work orders.
- Select proper torch tips, welding rods, and other equipment.
- Connect fuel or power lines to torches.
- Position parts to be welded or cut.
- Guide a flame or an electric arc along welding lines.
- Use measuring devices to check their work.

APTITUDES

- Be able to learn the tools and processes of welding.
- Have average use of numbers.
- Be able to visualize objects from drawings and blueprints and see slight differences in objects.
- Have average use of hands and fingers and eye-hand coordination.
- Be able to make decisions based on information.
- Be able to do precise work accurately.

WORK SETTING

Environment

Work indoors and outdoors in construction settings.

Hours

Work 40 hours a week; may require shift work including evenings and weekends.

Employers

Construction companies; machine shops; repair shops; utility companies; and manufacturers of automobiles, recreational vehicles, tools, machinery, toys, household appliances, and other metal products.

CONSIDERATIONS

- Workers wear safety glasses and other protective gear.
- Welders may be exposed to hazardous situations such as explosions, hot sparks, and noxious fumes.
- Many welders belong to unions.

NEBRASKA EMPLOYMENT

About 4,060 welders are projected to be employed by 1991.

WAGES

In Nebraska, salaries for welders vary according to the size and location as well as the type of employer. Skilled welders who have completed an accredited training program or apprenticeship program earn between $9.15 and $12.40 per hour in Nebraska. Annual salaries for workers employed full time range between $19,032 and $25,792. The median hourly wage for all welders in Nebraska is $11.40. The median annual salary for all welders in Nebraska is $23,712. Nationally, salaries span a very broad range between $11,700 and $32,000 a year.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National

Favorable

Factors

- New uses for welding are being found and new developments make it possible to weld more types of materials.

- Welding robots are replacing production line welders.

PREPARATION

SKILLS

- Knowledge of various methods of welding and soldering.
- Knowledge of the welding properties of metals and alloys, plastics, and adhesive bondings.
- Skills in reading blueprints and work orders.
- Skills in using hand and power tools.

LICENSING OR CERTIFICATION

- Certification is not required but is available through the American Welders' Society and the American Society of Mechanical Engineering. Certification may be required for persons who weld in highly critical positions (aircraft, building).
- To receive certification, a person must pass a performance test.

TRAINING

- High school graduation is usually required for this work.
- Some workers learn welding skills on the job.
- Technical schools and community colleges offer programs in welding.
- Apprenticeship programs are available.

EDUCATIONAL PROGRAM

281	Auto Body Repair
295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, chemistry, drafting, shop, physics, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 824-825 and 829.
Guide for Occupational Exploration (2nd ed., 1984), pp. 188-215 and 356-441.
Occupational Outlook Handbook (1990-91 ed.), p. 404.
Military Career Guide (1988-89 ed.), p. 178.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

7720 ASSEMBLERS

OCCUPATIONAL DESCRIPTION

Assemblers put together parts of manufactured products. They may work with hundreds of other workers to assemble a single finished product or may make entire products themselves. Many work on items that move past their work stations on conveyors. Some use heavy cranes and power tools, and others use tweezers, tiny cutters, and magnifying lenses.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Small Parts Assemblers (706.684-022)
Production Assemblers (706.687-010)
Electronics Assemblers (726.684-018)
Small Products Assemblers (739.687-030)
Component Assemblers (762.684-014)
Mechanical Assemblers (806.684-082)

NCIS RELATED OCCUPATIONS

6867 Precision Equipment Assemblers

WORK ACTIVITIES

- Read work orders or follow production drawings or verbal directions.
- Position and line up parts in relationship to each other.
- Tend machines or use tools to fasten parts in place.
- Test and inspect assemblies.
- Pass unit to another assembler.
- May put together entire product.

APTITUDES

- Be able to learn the methods of assembling and testing units or products.
- Have average use of words and numbers.
- Be able to make visual comparisons.
- Have average physical coordination and use of hands and fingers.
- Be able to do routine, repetitive tasks and work within set time limits.

WORK SETTING

Environment
Work indoors.

Hours
Work 40 hours a week; may require shift work that includes evenings and weekends.

Employers
Manufacturers of automobiles, plastic products, hand tools, hardware, appliances, clocks and watches, electrical equipment, engines, furniture, machinery, farm equipment, medical supplies, motorcycles, optical goods, plumbing supplies, sports equipment, and toys.

CONSIDERATIONS

- Workers may be exposed to high levels of noise and vibration.
- Job may involve reaching, lifting of medium loads weighing to 50 pounds, and standing or sitting for long periods of time.
- May be pressure to keep up with the pace of a production line.

NEBRASKA EMPLOYMENT

About 8,720 assemblers are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for assemblers range from a reported low of $4.00 to a high of $7.20. The median hourly wage for all assemblers in Nebraska is $5.60. Annual salaries range between $8,320 and $14,976. The median annual salary is $11,648. Nationally, salaries range between $9,100 and $24,000 a year.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Somewhat Favorable
Factors

- This is a large occupational area with a high rate of turnover.
- Foreign competition, automation, and cutbacks in production may limit growth in this area.

PREPARATION

SKILLS

- Knowledge of how to use tools and to assemble parts.
- Skills in using hand tools.
- Skills in reading blueprints.

TRAINING

- Some employers require a high school education for assemblers.
- Assemblers learn their skills on the job under the supervision of experienced workers.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in shop, industrial arts, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 681, 683, 700-701, 736, 751, and 817.
Guide for Occupational Exploration (2nd ed., 1984), pp. 293-341 and 356-441.

7753 HAND CUTTING AND TRIMMING WORKERS

OCCUPATIONAL DESCRIPTION

People in these jobs use hand tools and hand-held power tools to cut and trim articles particularly meat products.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Meat Boners (525.684-010)
Carcass Splitters (525.684-018)
Skinners (525.684-046)
Animal Stickers (525.684-050)
Meat Trimmers (525.684-054)

NCIS RELATED OCCUPATIONS

6871 Butchers and Meat Cutters

WORK ACTIVITIES

- Place saw or knife to cut through skin, bones, meat, or tissue.
- Trim away unneeded parts, skin, and meat.
- May trim bones for further processing.
- May move carcasses using hoists, hands, and hand tools.

APTITUDES

- Be able to learn the methods of hand cutting and trimming.
- Have average physical coordination and hand and finger dexterity.
- Be able to handle repetitive, routine activities.
- Have average space and form perception.
- Be able to do precise work quickly.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours a week.
Employers
  Meat packing plants and butcher shops.

CONSIDERATIONS

- Job involves lifting of medium loads up to 50 pounds, reaching, stooping, and standing for long periods.
- Work areas are often wet and slippery and room temperatures may be extremely cold.
- Injuries may result from cuts from sharp instruments and tools.

NEBRASKA EMPLOYMENT

About 90 hand cutters and trimmers are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for hand cutting and trimming workers range between $5.20 and $7.80. The median hourly wage for all workers is $6.50. Annual salaries for workers employed full time range between $10,816 and $16,224. The median annual salary for all workers in this occupation in Nebraska is $13,520. Nationally, annual wages range between $5.30 and $14.10 per hour.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Somewhat Favorable
Factors
- This is a large occupational group with a high turnover rate.
- Job opportunities are limited because of the automation of many work activities and a decline in the consumption of red meat.

PREPARATION

SKILLS

- Knowledge of the methods of hand cutting and trimming.
- Knowledge of safety practices.
- Skills in using hand and power tools.

TRAINING

- Many employers prefer to hire people who have completed high school.

- These workers learn their skills informally on the job under the supervision of experienced workers.
- Training as a meat cutter may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in shop and foods.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 344-345.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-441.

7820 PRODUCTION INSPECTORS

OCCUPATIONAL DESCRIPTION

Production inspectors check products or objects to be sure they are made correctly or are in good condition. Some sort, group, or classify objects. Depending upon the job, they may check products while they are being assembled or before they are shipped for sale. Inspectors are found in a variety of settings including laundries, factories, and packing plants.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

General Inspectors (609.684-010)

NCIS RELATED OCCUPATIONS

7830	Production Testers
7840	Production Samplers and Weighers

WORK ACTIVITIES

- Examine product for defects.
- Compare products with parts list or sample model to make sure assembly is complete.
- Check dimensions of product to see it meets specifications.
- Test products for structural flaws and hardness.
- Remove defective parts or mark defects.
- Record type of defects and number of products rejected.

APTITUDES

- Be able to learn the standards and testing procedures used in inspection.
- Have average use of numbers and be able to communicate with workers.
- Be able to see slight differences in objects.
- Be able to make decisions based on information and observation.
- Have average use of hands.
- Be able to perform repetitive tasks and work within precise standards.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; may require shift work including evenings and weekends.
Employers
    Manufacturing firms, food processing companies, and meat packing plants.

CONSIDERATIONS

- Workers may stand or walk an entire shift.
- Many workers are union members.

NEBRASKA EMPLOYMENT

About 1,400 production inspectors and graders are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for production inspectors range between $5.00 and $8.90. The average hourly wage for all production inspectors in Nebraska is $6.95. Annual salaries for workers employed full time range between $10,400 and $18,512. The median annual salary for all workers in this occupation in Nebraska is $14,456. Nationally, salaries range between $12,000 and $32,000.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- Employment outlook is influenced by general economic conditions.
- Increased national interest in product quality may increase job openings.

PREPARATION

SKILLS

- Knowledge of standards and testing procedures used in inspection.
- Skills in reading parts tests and interpreting drawings.

- Skills in making accurate measurements.
- Skills in making quick, consistent decisions.
- Skills in keeping records.

TRAINING

- Most employers prefer to hire people who are high school graduates.
- Production inspectors usually learn their skills informally on the job.
- Related coursework in machine technology at technical schools or community colleges may be helpful.
- Training in related occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

292	Electrical & Electronics Equipment Repair
295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, drafting, manufacturing, accounting, and shop.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 512.
Guide for Occupational Exploration (2nd ed., 1984), pp. 342-355.
Occupational Outlook Handbook (1990-91 ed.), p. 390.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
99804	Gateway Electronics Institute
99817	Institute of Computer Science
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

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7830 PRODUCTION TESTERS

OCCUPATIONAL DESCRIPTION

Production testers examine materials and products to see that they meet standard requirements. They perform chemical, electrical, mechanical, or other tests on electrical equipment, glass, raw ores, car parts, or any of hundreds of other items. They work in a variety of industries.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Brick Testers (579.384-010)
Motorcycle Testers (620.384-010)
Electronics Testers II (726.684-026)
Weld Inspectors II (819.687-010)

NCIS RELATED OCCUPATIONS

7820	Production Inspectors
7840	Production Samplers and Weighers

WORK ACTIVITIES

- Determine product specifications and standards.
- Perform prescribed test on product.
- Tend testing machines and check readings.
- Record type and number of defects.
- Reject defective units.

APTITUDES

- Be able to learn product standards and testing processes.
- Have average use of words and numbers.
- Be able to see slight differences in objects.
- Have average use of hands and fingers.
- Be able to work within set standards and make decisions based on data.
- Be able to handle routine, repetitive activities.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; may require shift work including weekends and evenings.
Employers
    Manufacturers, food processing plants, dairies, and foundries.

CONSIDERATIONS

- Job involves reaching, lifting of light loads weighing up to 25 pounds, and standing or sitting for long periods of time.

NEBRASKA EMPLOYMENT

About 1,400 production inspectors and graders are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for production testers range between $4.40 and $7.40. Annual salaries for workers employed full time range between $9,152 and $15,392. The median salary for all workers in this occupation in Nebraska is $12,272. Nationally, salaries range between $12,000 and $32,000 a year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- Employment opportunities are influenced by downturns in the economy.
- Many openings will result from the high turnover rate in this occupation.

PREPARATION

SKILLS

- Knowledge of product standards and testing processes.
- Skills in making precise measurements.
- Skills in keeping records.
- Skills in making consistent decisions quickly.

TRAINING

- High school graduation is the minimum educational requirement for this job.
- Most production testers learn their skills on the job under the supervision of experienced workers.
- Course work related to the manufacture of the product being tested may be helpful.
- Training in a related occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include algebra, geometry, shop, accounting, drafting, and courses related to the product being manufactured such as metal working, electronics, and foods.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 451, 539, 701, and 830.
Guide for Occupational Exploration (2nd ed., 1984), pp. 342-355.
Occupational Outlook Handbook (1990-91 ed.), p. 390.

7840 PRODUCTION SAMPLERS AND WEIGHERS

OCCUPATIONAL DESCRIPTION

Production samplers and weighers obtain samples of products or materials and weigh and/or test them to make sure that they meet certain standards. They may perform tests on the samples or prepare them for testing by other workers. The products and materials they work with may range from iron ore and metal sheets to cookie crumbs and coffee.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Samplers (579.484-010)
Weighers (732.687-086)
Grain Receivers (921.365-010)
Production Weighers (929.587-014)

NCIS RELATED OCCUPATIONS

7820	Production Inspectors
7830	Production Testers

WORK ACTIVITIES

- Determine product specifications and weights.
- Gather product samples.
- May remove moisture from product or determine moisture content.
- Set scales and measure weights.
- Record types and amounts of samples and results of tests.
- May perform other tests on samples.
- May prepare samples for testing by other workers.
- May weigh specified amounts of raw materials for use in making products.

APTITUDES

- Be able to learn to gather samples, to measure weights, and to perform other tests.
- Have average use of words and numbers.
- Be able to make decisions based on data.
- Have average physical coordination and hand and finger dexterity.
- Be able to do precise work accurately.
- Be able to see slight differences in objects.

WORK SETTING

Environment
Work indoors and outdoors to gather samples.

Hours
Work 40 hours a week; may require shift work including evenings and weekends.

Employers
Manufacturers, laboratories, refineries, mining and quarrying companies, food processing plants, and grain elevators.

CONSIDERATIONS

- Job involves lifting of light loads weighing up to 25 pounds, reaching, stooping, and standing or sitting for long periods of time.
- Workers may be exposed to hazardous chemicals.

NEBRASKA EMPLOYMENT

About 320 production samplers and weighers are projected to be employed by 1991.

WAGES

Wages for production samplers and weighers vary according to the amount of on-the-job training completed as well as the type, size and geographic location of the employer. In Nebraska, annual salaries span a wide range between $9,984 and $28,808. The median salary for all workers in this occupation in Nebraska is $19,385 a year. Nationally, the annual salary range is $12,000 to $32,000.

EMPLOYMENT GROWTH

Nebraska
Unfavorable

National
Somewhat Favorable

Factors
- Employment opportunities are influenced by upturns and downturns in the economy.
- Foreign competition has limited growth in manufacturing.

PREPARATION

SKILLS

- Knowledge of product standards and methods of weighing and gathering samples.
- Skills in keeping records.
- Skills in making precise measurements.
- Skills in interpreting product specifications.

TRAINING

- Some employers prefer to hire high school graduates.
- Samplers and weighers usually learn their skills informally on the job under the supervision of experienced workers.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, shop, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 452, 719, 899, and 909.
Guide for Occupational Exploration (2nd ed., 1984), pp. 342-355.

8113 RAILROAD CONDUCTORS AND YARDMASTERS

OCCUPATIONAL DESCRIPTION

Railroad conductors and yardmasters are in charge of train and yard crews. They see that passengers and freight get to their destinations safely and on time.

HOLLAND CODE

ESC (Enterprising, Social, Conventional)

SPECIALTIES

Train Dispatchers (184.167-262)
Yard Managers (184.167-278)
Passenger Car Conductors (198.167-010)
Pullman Conductors (198.167-014)
Road Freight Conductors (198.167-018)
Yard Conductors (910.137-022)

NCIS RELATED OCCUPATIONS

8232	Locomotive Operators
8233	Railroad Brake, Signal, and Switch Operators

WORK ACTIVITIES

- Collect tickets, passes, and cash fares.
- Provide information.
- Keep records of fares and passenger destinations.
- Supervise placement and order of the cars that make up a train.
- Keep records of contents and destination of each car.
- Supervise removal of freight.
- See that train operates following safety regulations.
- Oversee switching crews in railroad yards.
- Operate consoles which automatically control track switches.

APTITUDES

- Be able to learn the methods of coordinating railroad traffic, passengers, and freight.
- Have average use of words and numbers.
- Be able to relate to people.
- Have average space and form perception and eye-hand coordination.
- Be able to make decisions based on facts.
- Be able to work within set standards and time limits.
- Be able to complete a variety of tasks.

WORK SETTING

Environment
    Work indoors and outdoors.
Hours
    Work 40 hours a week; may include evenings, weekends, and holidays; some schedules are irregular.
Employers
    Railroad companies.

CONSIDERATIONS

- Conductors may have to spend several nights away from home each week.
- Workers may be exposed to noise and vibrations.

NEBRASKA EMPLOYMENT

About 480 railroad conductors and yardmasters are projected to be employed by 1991.

WAGES

In Nebraska, salaries for workers promoted to railroad conductor or yardmaster range between $14,144 and $25,168. Nationally, salaries vary according to the number of years of employment as a brake or switch operator prior to being promoted to this occupation. The average wage for yardmasters is $41,300 a year, while the average for conductors is $47,200 to $50,800 a year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Unfavorable
Factors
- More automation and the decreased use of railroads has limited employment growth.
- Most openings are filled within the company through promotions.

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PREPARATION

SKILLS

- Knowledge of railroad processes, communication systems, and safety practices.
- Skills in recordkeeping.
- Skills in supervision and decision making.
- Mechanical skills.

TRAINING

- This is not an entry-level position.
- The position of conductors and yardmasters are filled by promoting experienced brake or switch operators who have passed written exams. Many serve as brake operators for ten years or more before advancing to conductor.
- Training in a related occupation may be obtained thorugh apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school courses should include shop, electricity/electronics, math, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 119, 120, 149, and 879.
Guide for Occupational Exploration (2nd ed., 1984), pp. 457-462 and 566-570.

8212 TRACTOR-TRAILER TRUCK DRIVERS

OCCUPATIONAL DESCRIPTION

Tractor-trailer truck drivers drive tractor-trailer trucks to carry goods between terminals. Some deliver a load to a nearby city, pick up another loaded trailer, and return it to their home base on the same day. Others make runs that take days to complete. On very long trips, they may work with a partner and sleep when the partner drives. Some drivers have regular runs, and others have schedules that change from trip to trip.

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Tractor-Trailer Truck Drivers (904.383-010)
Van Drivers (905.663-018)
Hostlers (909.663-010)
Military Truck Drivers (M82120)

NCIS RELATED OCCUPATIONS

8213	Heavy Truck Drivers
8214	Light Truck Drivers
8215	Bus Drivers
8216	Taxicab Drivers and Chauffeurs
8218	Driver-Sales Workers

WORK ACTIVITIES

- Check loads and truck for safety.
- Drive truck to destination applying knowledge of driving regulations and skill in handling truck in different situations.
- Inspect truck for mechanical problem and report truck's condition.
- Keep driver's log.
- May help load and unload truck.

APTITUDES

- Be able to learn to drive a tractor-trailer truck.
- Be able to judge distances and clearances.
- Have average use of words and numbers.
- Be able to pay attention to details.
- Have average eye-hand and physical coordination and use of hands.
- Be able to handle routine, repetitive activities.

WORK SETTING

Environment
Work indoors inside trucks and outdoors loading and unloading.
Hours
Work 40 to 60 hours a week; long-haul drivers may be gone several nights in a week.
Employers
Trucking companies, wholesalers, large manufacturers and businesses, and self-employed.

CONSIDERATIONS

- Drivers are exposed to engine noises and vibrations.
- Truckers must be able to concentrate for long periods of time.
- The possibility of accidents is always present.
- Some workers belong to unions.

NEBRASKA EMPLOYMENT

About 21,820 truck drivers are projected to be employed by 1991.

WAGES

Salaries for tractor-trailer truck drivers in Nebraska range between $13,104 and $24,128 a year. Nationally, vary widely from $20,000 to $50,000 a year. Salaries will vary according to the size of the employer as well as the union affiliation of the worker. Some truckers are paid by the mile.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable
National
Somewhat Favorable
Factors

- The outlook for this occupation depends on the continued use of trucks to transport goods and materials and the level of economic activity of manufacturing industries and wholesale and retail trade.
- The need to replace workers who leave the occupation will create some job openings.

PREPARATION

SKILLS

- Knowledge of commercial driving regulations and traffic laws.
- Skills in driving tractor-trailer trucks under all types of driving conditions.
- Skills in keeping records.
- Skills in making minor repairs.

LICENSING OR CERTIFICATION

- Truck drivers in Nebraska must have a commercial driving permit from the State Department of Motor Vehicles.
- To get this license, a person must be at least 18 years old; pass written, vision, and driving tests; and submit a physical statement from a doctor.
- Drivers who travel across state lines must also pass a test covering motor carrier safety regulations of the United States Department of Transportation.

TRAINING

- Many truck drivers learn their skills on the job by working with an experienced driver.
- Some trucking firms have formal training programs for new employees.
- Formal driving courses are available at technical schools and community colleges.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

271	Vehicle and Equipment Operation
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in drivers' education and auto service.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 877.
Guide for Occupational Exploration (2nd ed., 1984), pp. 228-232.
Occupational Outlook Handbook (1990-91 ed.), p. 440.
Military Career Guide (1988-89 ed.), p. 190.

SCHOOLS

22501	Central Community College-Hastings Campus
99831	Nebraska Custom Diesel Driver's Training, Inc.
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22214	Western Nebraska Community College-Sidney Campus

8213 HEAVY TRUCK DRIVERS

OCCUPATIONAL DESCRIPTION

Heavy truck drivers drive single-body trucks that carry materials that weigh three tons or more. This type of truck includes dump, tow, flatbed, redi-mix, and tank trucks. Some of the trucks are mounted with special equipment.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Concrete-Mixing Truck Drivers (900.683-010)
Dump Truck Drivers (902.683-010)
Tank Truck Drivers (903.683-018)
Milk Route Drivers (905.483-010)
Garbage Collector Drivers (905.663-010)
Heavy Truck Drivers (905.663-014)
Tow Truck Operators (919.663-026)

NCIS RELATED OCCUPATIONS

8212 Tractor-Trailer Truck Drivers
8214 Light Truck Drivers
8215 Bus Drivers
8216 Taxicab Drivers and Chauffeurs
8218 Driver-Sales Workers

WORK ACTIVITIES

- Inspect truck and secure cargo.
- Transport cargo.
- Check deliveries against shipping papers.
- Collect receipts or payments for loads delivered.
- Keep records of driving time, travel expenses, and pick ups and deliveries.
- Make emergency repairs to truck.
- May help load and unload the cargo.

APTITUDES

- Be able to learn safety regulations and to drive heavy trucks.
- Have average use of words and numbers.
- Be able to do routine, repetitive tasks.
- Have average physical and eye-hand coordination and use of hands.
- Have average space and form perception.

WORK SETTING

Environment
Work indoors and outdoors.

Hours
Work 40 to 60 hours a week; may be away from home for several nights at a time.

Employers
Trucking companies, government agencies, educational institutions, businesses that deliver their own goods, and self-employed.

CONSIDERATIONS

- Most employers require drivers to be at least 25 years old.
- Drivers must concentrate for long periods of time and the truck may be noisy and vibrate.
- May require lifting up to 100 pounds.
- Many truck drivers belong to unions.

NEBRASKA EMPLOYMENT

About 21,820 truck drivers are projected to be employed by 1991.

WAGES

In Nebraska, salaries for heavy truck drivers vary according to the type of employment and union affiliation. Annual wages range between $15,288 and $23,712. Nationally, the average yearly wage for heavy straight truck drivers is $22,100.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable

National
Somewhat Favorable

Factors
- Employment outlook depends on economic stability and growth and freight rates.
- The development and use of larger trucks and improved road conditions may limit growth.

PREPARATION

SKILLS

- Knowledge of traffic laws and regulations.
- Skills in operating heavy trucks.
- Skills in keeping records.
- Mechanical skills.

TRAINING

- Many employers prefer to hire people who are high school graduates.
- Beginning drivers may learn their skills on the job.
- A few larger companies offer their own training programs.
- Courses in truck driving are available in trade schools and community colleges.
- Training may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

271	Vehicle and Equipment Operation
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in drivers' education and auto services.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 877, 878, and 891.
Guide for Occupational Exploration (2nd ed., 1984), pp. 228-232.
Occupational Outlook Handbook (1990-91 ed.), p. 440.

SCHOOLS

22501	Central Community College-Hastings Campus
99831	Nebraska Custom Diesel Driver's Training, Inc.
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22214	Western Nebraska Community College-Sidney Campus

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8214 LIGHT TRUCK DRIVERS

OCCUPATIONAL DESCRIPTION

Light truck drivers drive vehicles that carry less than three tons weight. The type of trucks they use include pick-up, delivery, and van trucks. Most of these drivers deliver goods within a local area to stores, homes, farms, plants, or construction sites.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Food-Service Drivers (906.683-010)
Liquid-Fertilizer Servicers (906.683-014)
Light Truck Drivers (906.683-022)
Escort-Vehicle Drivers (919.663-022)

NCIS RELATED OCCUPATIONS

8212 Tractor-Trailer Truck Drivers
8213 Heavy Truck Drivers
8215 Bus Drivers
8216 Taxicab Drivers and Chauffeurs
8218 Driver-Sales Workers

WORK ACTIVITIES

- May help load cargo.
- Check loads against shipping papers and secure the load.
- Drive truck to deliver goods.
- May help unload cargo.
- Present bills, gather payments, and give receipts.
- May make emergency repairs on truck.
- Keep records of deliveries and routes.

APTITUDES

- Be able to learn to drive light trucks.
- Have average use of words and numbers.
- Be able to perform routine, repetitive tasks.
- Have average physical and eye-hand coordination and hand and finger dexterity.
- Be able to judge distances accurately.

WORK SETTING

Environment
Work indoors and outdoors.
Hours
Work 40 hours a week; some businesses require early morning and night work.
Employers
Hotels, restaurants, food catering companies, businesses that have their own delivery services, delivery companies, construction contractors, government agencies, educational institutions, and beverage distributors.

CONSIDERATIONS

- Drivers may be required to lift medium loads weighing up to 50 pounds.
- A good driving record is necessary.

NEBRASKA EMPLOYMENT

About 21,820 truck drivers are projected to be employed by 1991.

WAGES

Salaries for light truck drivers vary according to the type, size and location of the employer as well as the experience and union affiliation of the worker. In Nebraska, salaries range between $13,374 and $21,944 a year. Nationally, the average yearly salary for light trick drivers is $15,900.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable
National
Somewhat Favorable
Factors
- Employment opportunities are influenced by fluctuations in the economy.
- Some companies are replacing drivers-sales workers with sales staff and light truck drivers.
- Most openings will result from the need to replace workers who leave the occupation.
- Competition for positions will be keen.

PREPARATION

SKILLS

- Knowledge of traffic laws and regulations.
- Skills in driving light trucks.
- Skills in recordkeeping.
- Skills in truck repair.

TRAINING

- Most employers prefer to hire people who are high school graduates.
- Beginning drivers usually learn their skills on the job.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in drivers' education and auto mechanics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 878 and 891.
Guide for Occupational Exploration (2nd ed., 1984), pp. 228-232.
Occupational Outlook Handbook (1990-91 ed.), p. 440.

8215 BUS DRIVERS

OCCUPATIONAL DESCRIPTION

Bus drivers take passengers from place to place in a city or from city to city. They may pick up and discharge passengers at bus stops along city streets or may take children to schools and return them to their homes at the end of each school day. They may transport workers to and from work sites or drive a chartered bus to take groups to and from different locations. They may pick up and discharge passengers in many cities along a route. DOT 913.463-010

HOLLAND CODE

RSE (Realistic, Social, Enterprising)

NCIS RELATED OCCUPATIONS

8212	Tractor-Trailer Truck Drivers
8213	Heavy Truck Drivers
8214	Light Truck Drivers
8216	Taxicab Drivers and Chauffeurs
8218	Drivers-Sales Workers

WORK ACTIVITIES

- Inspect bus before departure.
- Assist passengers to board bus.
- May help with baggage and collect tickets and fares; keep records of fares and receipts.
- May answer questions and provide information.
- Control heating, lighting, and ventilating systems for passengers comfort.
- May make emergency repairs.

APTITUDES

- Be able to learn to drive a bus and assist passengers.
- Have average use of words and numbers.
- Be able to deal with people.
- Have average eye-hand coordination and manual dexterity.
- Be able to make decisions based on data, experience, and observations.
- Be able to react quickly and calmly in emergencies.
- Be able to judge distances accurately.

WORK SETTING

Environment
    Work indoors.

Hours
    Work 35 to 40 hours a week; may require shift work including evenings and weekends; may work split shifts in mornings and afternoons.

Employers
    Transit companies, school systems, charter companies, and intercity bus companies.

CONSIDERATIONS

- Job involves reaching and lifting medium loads weighing up to 50 pounds.
- New drivers may be required to serve as substitutes and have irregular schedules.
- Some drivers belong to unions.

NEBRASKA EMPLOYMENT

About 2,500 bus drivers are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages for bus drivers range from a reported low of $5.15 to a high of $7.60. Salaries for workers employed 40 hours a week range between $10,712 and $15,808 a year. Nationally, salaries for workers employed 40 hours a week range from $10,660 to $30,900. Hourly rates for school bus drivers range from $7.74 to $9.79 an hour. Nationwide, 70 percent of all bus drivers operate school buses.

EMPLOYMENT GROWTH

Nebraska
    Favorable

National
    Somewhat Favorable

Factors
- Employment outlook depends upon funding, expansion of transit bus systems, and the volume of passenger traffic.
- In some areas opportunities are declining because of the decrease in funding for public and school transportation.

PREPARATION

SKILLS

- Knowledge of traffic laws and regulations.
- Skills in driving a bus.

- Skills in dealing with people.
- Skills in keeping records.

LICENSING OR CERTIFICATION

- Drivers must have a valid Nebraska driver's license, be at least 21 years old, and be in good health.
- Drivers who transport children must also have a special bus permit issued by the Department of Motor Vehicles.
- Intercity drivers must pass written exams given by the United States Department of Transportation.
- Some drivers also must hold a commercial driving permit.

TRAINING

- Most employers prefer to hire high school graduates.
- Intercity bus companies provide training programs that last two to eight weeks.
- Local transit companies usually provide training programs lasting about 15 days.
- Other employers provide on-the-job training.

EDUCATIONAL PROGRAM

271	Vehicle and Equipment Operation
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subject should include courses in drivers' education, accounting, com-position, health, and psychology.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 886.
Guide for Occupational Exploration (2nd ed., 1984), pp. 498-500.
Occupational Outlook Handbook (1990-91 ed.), p. 440.

SCHOOLS

22501	Central Community College-Hastings Campus
99831	Nebraska Custom Diesel Driver's Training, Inc.
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22214	Western Nebraska Community College-Sidney Campus

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8216 TAXICAB DRIVERS AND CHAUFFEURS

OCCUPATIONAL DESCRIPTION

Taxicab drivers and chauffeurs drive cars, taxicabs, limousines, or hearses. Their jobs vary. For example, they may drive pas-sengers in a city cab or cars rented to customers. Some may transport office workers and visitors for a business or industry or drive newly assembled cars to shipping areas. Others drive private cars for their owners or hearses and limousines for funeral directors.

HOLLAND CODE

IRE (Investigative, Realistic, Enterprising)

SPECIALTIES

Funeral Car Chauffeurs (359.673-014)
Taxi Drivers (913.463-018)
Chauffeurs (913.663-010)
Car Rental Deliverers (919.663-010)
Drivers (919.683-014)

NCIS RELATED OCCUPATIONS

8212	Tractor-Trailer Truck Drivers
8213	Heavy Truck Drivers
8214	Light Truck Drivers
8215	Bus Drivers
8218	Driver-Sales Workers

WORK ACTIVITIES

- Help passengers get into and out of the car.
- Load or unload luggage, packages, caskets, etc.
- May provide information.
- Drive passengers to chosen destinations.
- May collect fees from passengers.
- Clean and service car to prepare for next trip.
- May use car radio to send and receive messages.
- Keep records of fees, mileage, and time.

APTITUDES

- Be able to learn to drive taxi, hearse, or limousine.
- Have average use of words and numbers.
- Be able to judge distances accurately.
- Have average physical and eye-hand coordination and hand and finger dexterity.
- Be able to deal with people in stressful situations.
- Be able to make decisions based on data, experience, and observation.

WORK SETTING

Environment
Work mainly indoors.
Hours
Work 40 to 60 hours a week; may work shifts which include evenings, weekends, and holidays; may be away from home several nights in a week; hours may be irregular; part-time work available.
Employers
Car rental companies, taxi companies, factories that build automobiles, businesses and industries, private individuals, limousine and chauffeur businesses, airports, hotels, and self-employed.

CONSIDERATIONS

- Job involves lifting medium loads weighing up to 50 pounds.
- Drivers may spend long periods sitting and waiting and may spend long periods working under pressure of driving safely in adverse conditions.
- Most jobs are in metropolitan areas.

NEBRASKA EMPLOYMENT

About 760 taxicab drivers and chauffeurs are projected to be employed by 1991.

WAGES

In Nebraska, wages for taxicab drivers and chauffeurs vary according to type and geographic location of employer. The highest wages for these occupations will be found in large cities. Hourly wages span a range from a low of $3.90 to a high of $6.30. Most taxicab drivers receive additional compensation in the form of tips and commission in addition to an hourly wage. Annual salaries for all workers in these occupations in Nebraska range between $8,112 and $13,104. Nationally, salaries range between $6,500 and $15,000 a year.

EMPLOYMENT GROWTH

Nebraska
Favorable
National
Somewhat Favorable
Factors

- Little growth is expected in this area, but the high turnover rate should create many openings.

PREPARATION

SKILLS

- Knowledge of state and local motor vehicle laws and regulations.
- Knowledge of geographic area served.
- Skills in driving motor vehicles under all types of conditions.
- Skills in keeping records.
- Skills in dealing with people.
- Skills in making change.

LICENSING OR CERTIFICATION

- To receive a taxicab drivers' or chauffeurs' license, an applicant must have a valid Nebraska driver's license and pass a written exam. A criminal history check is done on all applicants.

TRAINING

- Some employers prefer to hire high school graduates.
- Many companies hire applicants who are at least 21 years old, while some require their drivers to be at least 25 years old.
- Employers may require applicants to pass a test showing their familiarity with community streets and local traffic regulations and to demonstrate their driving experience.
- Any training is usually provided quickly on the job.
- Training in a related occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in drivers' education, business math, speech, and psychology.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 243, 886, and 891.
Guide for Occupational Exploration (2nd ed., 1984), pp. 498-500.

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8218 DRIVER-SALES WORKERS

OCCUPATIONAL DESCRIPTION

Driver-sales workers drive over assigned routes to deliver and sell goods or collect and deliver items. Their work duties depend upon the particular jobs they have. For example, some deliver newspapers or milk to homes or baked goods or other products to grocery stores. Others pick up and deliver laundry or service and refill vending machines.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Sales Route Drivers (292.353-010)
Newspaper-Delivery Drivers (292.363-010)
Lunch-Truck Drivers (292.463-010)
Coin Collectors (292.483-010)
Sales Route Driver Helpers (292.667-010)

NCIS RELATED OCCUPATIONS

4743	Mail Carriers
8212	Tractor-Trailer Truck Drivers
8213	Heavy Truck Drivers
8214	Light Truck Drivers
8215	Bus Drivers
8216	Taxicab Drivers and Chauffeurs

WORK ACTIVITIES

- Check product inventory of truck against delivery schedule.
- May load truck.
- Drive truck to deliver items to customers' homes or businesses.
- May write up orders, collect money, and make change.
- Keep records of sales or deliveries.
- May call on prospective customers to sell products or tell regular customers about new products.
- May stock shelves and set up product displays.

APTITUDES

- Be able to learn selling techniques, management of sales routes, and driving trucks.
- Have average use of words and numbers.
- Be able to communicate with and influence other people.
- Have average eye-hand and physical coordination and space and form perception.
- Be able to handle routine, repetitive tasks.

WORK SETTING

Environment
Work indoors and outdoors.
Hours
Work 40 to 60 hours a week; work day may begin at 4:00 a.m.
Employers
Businesses that distribute food and beverages, newspaper companies, laundry and dry cleaning businesses, vending machine companies, businesses that make routine deliveries, and retailers and wholesale of various products.

CONSIDERATIONS

- Job involves a considerable amount of freedom and independent work.
- Some workers are paid on a commission basis.
- Drivers do reaching, stooping, and lifting of loads weighing up to 50 pounds.

NEBRASKA EMPLOYMENT

About 1,580 driver-sales workers are projected to be employed by 1991.

WAGES

Hourly wages for driver-sales workers in Nebraska range from $5.15 to $9.05. Annual salaries for all workers in this occupation in Nebraska range between $10,712 and $18,824. Nationally, salaries range between $10,000 and $20,000 a year.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Somewhat Favorable
Factors
- Most openings will result from the need to replace workers who leave the occupation.

PREPARATION

SKILLS

- Knowledge of traffic regulations and the geographic area covered.
- Knowledge of sales techniques.
- Knowledge of the product sold or delivered.
- Skills in driving motor vehicles.
- Skills in keeping records.

LICENSING OR CERTIFICATION

- Driver-sales workers must have a valid Nebraska driver's license.

TRAINING

- Most employers prefer applicants with a high school education.
- Beginning driver-sales workers receive their training on the job.
- Training in a related occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, drivers' education, accounting, auto service, and marketing.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 217.
Guide for Occupational Exploration (2nd ed., 1984), pp. 228-232, 482-488, and 501-503.
Occupational Outlook Handbook (1990-91 ed.), p. 440.

8232 LOCOMOTIVE OPERATORS

OCCUPATIONAL DESCRIPTION

Locomotive operators control railed vehicles that carry people or materials. These vehicles include railroad locomotives, subway and elevated trains, streetcars, and industrial and mining rail engines.

HOLLAND CODE

REI (Realistic, Enterprising, Investigative)

SPECIALTIES

Locomotive Firers (910.363-010)
Locomotive Engineers (910.363-014)
Yard Engineers (910.363-018)
Motor Operators (910.683-014)
Streetcar Operators (913.463-014)
Rail-Tractor Operators (919.683-018)
Trackmobile Operators (919.683-026)

NCIS RELATED OCCUPATIONS

8113	Railroad Conductors and Yardmasters
8233	Railroad Brake, Signal, and Switch Operators

WORK ACTIVITIES

- Inspect locomotive to check fuel, water, and supplies before trip.
- Move controls to drive locomotive after receiving starting signal.
- Interpret train orders, signals, and regulations.
- Call out train signals to other workers and meet with them to give and receive information.
- Watch track for obstructions.
- Inspect locomotive after trip.
- Prepare reports including accidents and unscheduled stops.

APTITUDES

- Be able to learn to drive locomotives.
- Have average use of words and numbers.
- Be able to judge distances and make visual comparisons.
- Have average physical coordination and use of hands and figures.
- Be able to make decisions based on data, experience, and observation.
- Be able to supervise others.

WORK SETTING

Environment
Work indoors, often in confined quarters.

Hours
Work 40 hours a week; schedules may be irregular and include evenings, weekends, and holidays; may be away from home several days a week.

Employers
Railroad companies, mining and logging companies, transit companies, and industrial plants that have their own rail system.

CONSIDERATIONS

- Work areas are often noisy and there is the danger of accidents.
- Most locomotive engineers are union members.

NEBRASKA EMPLOYMENT

About 450 locomotive engineers are projected to be employed by 1991.

WAGES

In Nebraska, salaries for locomotive operators range between $19,136 and $21,216. Salaries will vary according to the number of years employed prior to promotion to this position as well as the amount of training completed for this position. Nationally, locomotive operators earn an average of $54,600 a year.

EMPLOYMENT GROWTH

Nebraska
Unfavorable

National
Unfavorable

Factors
- The amount of freight shipped by rail has declined.
- Many engineer or operator positions are filled on a promotional basis from within the companies.

PREPARATION

SKILLS

- Knowledge of the operation of railed vehicles and related safety practices.
- Knowledge of speed limits, signals, and switching orders.
- Skills to make emergency repairs.
- Skills in keeping records and writing reports.

TRAINING

- Most employers prefer to hire applicants with a high school education; some prefer applicants with two years of college.
- Skills are learned through on-the-job training. Trainees take a qualifying exam; after passing the exam, trainees are eligible for promotion to engineer.
- Beginners start as extra board engineers who substitute for regular engineers.
- Training in a specialty occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in composition, physics, shop, electrical /electronics, and math.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 880, 886, and 891.
Guide for Occupational Exploration (2nd ed., 1984), pp. 228-232.

8233 RAILROAD, BRAKE, SIGNAL, AND SWITCH OPERATORS

OCCUPATIONAL DESCRIPTION

Railroad, brake, signal, and switch operators tend track switches and couple cars to make up trains. Their respon-sibilities vary from job to job. For example, they may inspect couplings, air hoses, handbrakes, and other train equipment or may set out emergency warning signals, reroute train cars, and signal workers to set hand brakes. Some may climb to the top of trains to inspect equipment or set car brakes or may make minor repairs to equipment. Others may collect tickets from passengers, help them board trains, and store their baggage.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Passenger Train Brakers (910.364-010)
Road Freight Brake Couplers (910.367-010)
Locomotive Operator Helpers (910.367-022)
Yard Couplers (910.664-010)
Switch Tenders (910.667-026)
Brake Holders (932.664-010)

NCIS RELATED OCCUPATIONS

8113	Railroad Conductors and Yardmasters
8232	Locomotive Operators

WORK ACTIVITIES

- Inspect train equipment and make sure it works properly.
- Control air-conditioning, heating, and lighting on a train.
- Make minor repairs.
- Signal engineer to start and stop train when cars are coupled and uncoupled.
- Relay signals to other workers or watch for signals from others.
- Read switching orders and check them with yard engineers.
- Couple and uncouple railroad cars.
- Help passengers board and leave train.
- Collect tickets, fares, and passes.
- Answer questions about schedules and rules.

APTITUDES

- Be able to learn the processes of brake coupling, signaling, and switching.
- Have average use of words and numbers.
- Have average space and form perception and be able to make visual comparisons.
- Be able to make decisions based on facts.
- Have average physical and eye-hand coordination and use of hands.
- Be able to handle routine, repetitive tasks.

WORK SETTING

Environment
Work indoors and outdoors in all kinds of weather.
Hours
Work 40 hours a week; schedules are often irregular and include night, weekend, and holiday hours; may be on call.
Employers
Railroad companies.

CONSIDERATIONS

- Applicants cannot be color blind.
- Job requires a high degree of physical stamina to climb, stoop, reach, bend, and lift medium loads weighing up to 50 pounds.
- Work may be hazardous as people work around moving cars.
- Many of these operators belong to unions.

NEBRASKA EMPLOYMENT

About 1,240 railroad, brake, signal, and switch operators are projected to be employed by 1991.

WAGES

Annual salaries for workers in these occupations range between $14,768 and $16,650 a year in Nebraska. Nationally, average salaries are $34,000 a year for yard service workers and $45,000 a year for freight service workers.

EMPLOYMENT GROWTH

Nebraska
Unfavorable

390

National

Unfavorable

Factors

- The amount of freight shipped by rail has decreased.
- New technological developments have decreased the need for these workers.

PREPARATION

SKILLS

- Knowledge of the processes of brake coupling, signaling, and switching.
- Knowledge of safety practices.
- Knowledge of yard and road operations.
- Skills in dealing with people.
- Skills in following instructions carefully.

TRAINING

- Almost all employers require a high school diploma.
- Railroad companies provide on-the-job training.
- After completing training, they become extraboard operators who substitute for more experienced workers.
- Training in a related occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631 Apprenticeship Training
632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in shop, industrial arts, electrical/ electronics, and math.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 880-882 and 915.
Guide for Occupational Exploration (2nd ed., 1984), pp. 262-275.

8250 AIRPLANE PILOTS AND NAVIGATORS

OCCUPATIONAL DESCRIPTION

Airplane pilots and navigators fly or direct the course of planes and other aircraft. While most pilots fly planes to transport passengers and cargo, many others perform tasks such as crop dusting, inspecting powerlines, and taking pictures. Some pilots may fly new aircraft to test their performance and safety or may teach courses and give flying lessons. They may work alone or as part of a flying crew.

Navigators work with pilots to locate the position and direct the course of the aircraft.

HOLLAND CODE

RIE (Realistic, Investigative, Enterprising)

SPECIALTIES

Navigators (196.167-014)
Flying Instructors I (196.223-010)
Agricultural Airplane Pilots (196.263-010)
Airplane Pilots (196.263-010)
Commercial Airplane Pilots (196.263-014)
Executive Pilots (196.263-030)
Helicopter Pilots (196.263-038)
Test Pilots (196.263-042)
Flight Engineers (621.261-018)
Military Airplane Pilots (M82500)
Military Helicopter Pilots (M82501)
Military Airplane Navigators (M82502)
Military Flight Engineers (M82503)

NCIS RELATED OCCUPATIONS

3920 Air Traffic Controllers

WORK ACTIVITIES

- Teach flight crew how to handle emergencies.
- Locate a plane's position and direct its course.
- Go with students on training flights and show them flight procedures.
- Fly plane or helicopter to dust or spray crops.
- Log information and keep records.
- Check performance of planes and test them.
- Pilot private and commercial planes to transport passengers and cargo.
- Talk with control towers for instructions and file flight plans.
- Go with pilots on flights to evaluate their skills.

APTITUDES

- Be able to learn to fly airplanes and plot flight plans.
- Have good ability with words and numbers.
- Be able to see slight differences in objects and have good space and form perception.
- Have good eye-hand coordination and hand and finger dexterity.
- Be able to make decisions quickly based on data, observations, and experience.
- Be able to work under stress and within set time limits and procedures.

WORK SETTING

Environment

Work indoors in small, confined space; may work outdoors to fuel or load planes.

Hours

Work 70 to 90 hours a month; schedules may be irregular including evenings, weekends and holidays; may be seasonal.

Employers

Crop spraying companies, commercial airline companies, air freight companies, air charter companies, government agencies, private corporations, nonprofit organizations, airplane service and maintenance shops, flight schools, and self-employed.

CONSIDERATIONS

- Pilots work in stressful conditions.
- Crop dusting pilots may come in contact with dangerous chemicals.
- Pilots must sit in one place and concentrate for long periods of time.
- Most of these workers belong to a union.

NEBRASKA EMPLOYMENT

About 260 airplane pilots and navigators are projected to be employed by 1991.

WAGES

Wages for airline pilots and navigators vary according to the type and size of employer as well as the number of hours worked. Hourly wages for all workers in these occupations range between $7.80 and $12.15. Annual salaries in Nebraska range between $16,224 and $25,272.

Nationally, salaries are much higher. In the airlines the average salary for pilots is $80,000. Starting salary for navigators is $18,000 a year and the average salary is $42,000. Pilots working outside the airlines earn less: $42,000 to $71,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Somewhst Favorable
National
  Favorable
Factors
- Competition especially for commercial pilot positions is keen.
- More private businesses are using their own airplanes and pilots for travel.
- Computerized navigation equipment should reduce the need for flight engineers and navigators.
- Many openings will result from the need to replace workers.

PREPARATION

SKILLS

- Knowledge of FAA regulations, safe flight principles, and navigation techniques.
- Skills in flying various types of aircraft.
- Skills in planning and organizing.
- Skills in keeping records and paying attention to details.
- Knowledge of meterology, mathematics, aerodynamics, and aeronautics.

LICENSING OR CERTIFICATION

- Pilots and navigators must hold appropriate Federal Aviation Administration certificates. Crop dusting pilots must pass an exam given through the United States Environmental Protection Agency and receive a certificate from the Nebraska Aeronautics Commission.
- Airline pilots must pass FAA written and flight exams in order to earn a flight engineer's license. Most airlines prefer pilots who already have this license, although some may train those who only have a commercial license.

TRAINING

- Most employers prefer to hire applicants with a college education.
- Applicants must have the necessary licenses from the Federal Aviation Administration.
- Pilots must meet rigid physical qualifications.
- Agricultural pilots must graduate from an agricultural pilot course and may have taken courses offered by the United States Environmental Protection Agency through the University Extension Service.

EDUCATIONAL PROGRAM

272 Air Transportation

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in advanced math, algebra, geometry, physics, chemistry, drafting, geography, shop, electrical/electronics, and psychology.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 146-147 and 540.
Guide for Occupational Exploration (2nd ed., 1984), pp. 176-187.
Occupational Outlook Handbook (1990-91 ed.), p. 210.
Military Career Guide (1988-89 ed.), pp. 186, 320, 322, and 324.

SCHOOLS

21102	Chadron State College
21810	Embry-Riddle Aeronautical University
21311	Kearney State College
99734	LinAire, Inc.
22304	Mid-Plains Community College
99833	Sky Harbor Air Service, Inc.

8312 OPERATING ENGINEERS

OCCUPATIONAL DESCRIPTION

Operating engineers control machinery used to dig and grade earth, put up structures, and move materials. This machinery includes power cranes, bulldozers, trench diggers, paving machines, and many other types of construction equipment. Some workers know how to operate many kinds of machines, others only a few, and their work duties depend upon the machinery they operate.

HOLLAND CODE

RIS (Realistic, Investigative, Social)

SPECIALTIES

Operating Engineers (859.683-010)
Military Construction Equipment Operators (M83120)

NCIS RELATED OCCUPATIONS

6466 Paving Equipment Operators
8318 Industrial Truck Operators

WORK ACTIVITIES

- Operate compressors, pumps, hoists, derricks, cranes, shovels, tractors, or scrapers to do construction work.
- Drive machines and control attachments.
- Move machinery or materials.
- Pour concrete or other paving materials.
- Adjust hand wheels, push pedals, turn valves, pull levers, and operate controls.
- Service and repair equipment.

APTITUDES

- Be able to learn to operate equipment used in construction.
- Have average verbal and math abilities.
- Be able to follow set procedures accurately.
- Have average physical and eye-hand coordination and use of hands and fingers.
- Be able to judge distance accurately.
- Be able to make decisions based on data, experience, and observations.

WORK SETTING

Environment

Work outdoors but may work in machines sheltered from the weather; may work at sites far from home and in isolated areas.

Hours

Work 40 hours a week; may work longer hours during peak construction periods; may be subject to seasonal layoffs.

Employers

Construction companies, government public works, highway departments, mining companies, utility companies, and self-employed.

CONSIDERATIONS

- Engineers are subjected to high noise levels and vibration from machines.
- Workers are exposed to hazards associated with heavy machinery and hazards of working around collapsing excavations, falling objects, snapped cables, and damaged power lines.
- Many of these workers are union members.

NEBRASKA EMPLOYMENT

About 910 operating engineers are projected to be employed by 1991.

WAGES

Wages for operating engineers in Nebraska range from a low of $7.26 per hour to a high of $12.89 per hour. The median hourly wage for all workers in this occupation in Nebraska is $9.19 per hour. Annual salaries for workers employed 40 hours a week range between $15,100 and $26,811. The median annual salary is $19,115. Nationally, annual salaries average $23,400 a year.

EMPLOYMENT GROWTH

Nebraska

Somewhat Favorable

National

Somewhat Favorable

Factors

- The outlook depends upon the demand for new homes, factories, commercial buildings, and other structures and the amount of

maintenance work on roads and highways.
- The construction industry is highly affected by general economic conditions with fewer jobs available during economic downturns.

PREPARATION

SKILLS

- Knowledge of how to operate a variety of heavy machines.
- Knowledge of the characteristics of wet and dry soil.
- Knowledge of how to operate machines safely and of first aid.
- Skills in mechanics and welding.

TRAINING

- Some employers prefer to hire people who have completed high school.
- These workers often learn their skills informally on the job under the supervision of experienced workers.
- Apprenticeship programs are available.
- Some trade schools and community colleges offer course work in heavy equipment operation.

EDUCATIONAL PROGRAM

271	Vehicle and Equipment Operation
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in auto mechanics, shop, metal working, and construction.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 854.
Guide for Occupational Exploration (2nd ed., 1984), pp. 256-261.
Occupational Outlook Handbook (1990-91 ed.), p. 436.
Military Career Guide (1988-89 ed.), p. 185.

SCHOOLS

22501	Central Community College-Hastings Campus
99831	Nebraska Custom Diesel Driver's Training, Inc.
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22214	Western Nebraska Community College-Sidney Campus

8318 INDUSTRIAL TRUCK OPERATORS

OCCUPATIONAL DESCRIPTION

Industrial truck operators move materials using industrial trucks or tractors equipped with lifts, platforms, trailer hitches, or other attachments. They move materials from place to place in factories, plants, or storage yards. Many also do other tasks such as loading, unloading, and weighing materials.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Front-End Loader Operators (921.683-042)
Industrial-Truck Operators (921.683-050)
Straddle-Truck Operators (921.683-070)
Tractor Operators (929.683-014)

NCIS RELATED OCCUPATIONS

6466	Paving Equipment Operators
8312	Operating Engineers

WORK ACTIVITIES

- Drive trucks and control lifting devices.
- Position lifting devices or hook truck to trailers.
- Move loads following safety procedures.
- May load and unload materials and stack products.
- May weigh materials and record weight.
- May load and unload pallets or trailers.

APTITUDES

- Be able to operate industrial trucks.
- Have average eye-hand and physical coordination and use of hands and fingers.
- Be able to do repetitious, routine tasks.
- Have good eyesight and depth perception.
- Be able to follow oral and written instructions.

WORK SETTING

Environment

Work indoors in warehouse and outdoors on loading docks.

Hours

Work 40 hours a week; may require shift work including evenings and weekends.

Employers

Manufacturing firms, trucking and warehousing firms, wholesalers, department stores, lumber yards, and construction companies.

CONSIDERATIONS

- Work requires lifting medium loads weighing up to 50 pounds.
- Workers face hazards from materials falling and vehicles colliding.
- Some operators belong to unions.

NEBRASKA EMPLOYMENT

About 2,100 industrial truck operators are projected to be employed by 1991.

WAGES

In Nebraska, hourly wages average between a reported low of $5.35 and a high of $11.24. The median hourly wage for all workers is $9.11. Annual salaries average between $10,433 and $23,379. The median annual salary in Nebraska is $18,990. Nationally, salaries average $17,680 a year.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National

Somewhat Favorable

Factors

- These positions are frequently filled within the firms on a seniority basis.
- The employment outlook depends on the level of activity in manufacturing and wholesale and retail trade.
- Growth will be limited by the development of more efficient trucks and other mechanized material-handling equipment.

PREPARATION

SKILLS

- Knowledge of industrial truck operations.
- Mechanical skills.
- Skills in recordkeeping.
- Knowledge of industrial safety regulations.
- Skills in judging distances accurately.

TRAINING

- Some employers prefer to hire high school graduates.
- Skills are usually learned informally on the job.
- Many employers require applicants to pass a physical examination.
- Training in a related occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631 Apprenticeship Training
632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, shop, and auto mechanics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 903-904 and 909.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.
Occupational Outlook Handbook (1990-91 ed.), p. 440.

8618 MACHINE OPERATORS HELPERS

OCCUPATIONAL DESCRIPTION

Machine operators helpers assist workers who operate and tend machines used to make, process, or finish products and materials. They work in a variety of industries and may help one worker or a group of workers.

HOLLAND CODE

RCE (Realistic, Conventional, Enterprising)

SPECIALTIES

Feed-Mixer Helpers (520.686-018)
Flour-Blender Helpers (520.686-022)
Custom-Feed-Mill Operator Helpers (521.686-026)
Processor Helpers (521.686-050)
Ice Cream Freezer Assistants (529.685-146)
Dairy Helpers (529.686-026)
Cook Helpers (529.687-050)
Mixer Helpers (550.686-026)
Mix-Machine Feeders (550.686-030)
Furnace Helpers (553.687-014)
Kiln-Operator Helpers (573.685-022)
Dry-Kiln Operator Helpers (573.687-014)
Kiln-Burner Helpers (573.687-026)
Carton-Forming-Machine Helpers (641.686-014)
Cutting-Machine-Tender Helpers (690.686-030)
Glass-Cutter Helpers (775.687-018)
Automotive Painter Helpers (845.684-014)
Pumper Helpers (914.687-018)

NCIS RELATED OCCUPATIONS

8646	Surveyors Helpers
8650	Extractive Helpers
8725	Machine Feeders and Offbearers

WORK ACTIVITIES

- Carry materials and equipment to and from the work area.
- Load and unload materials onto and from the machines.
- Keep machinery and work area clean.
- May measure and mix materials, grease and oil machinery, and keep production or processing records.
- May adjust machine controls or do other tasks to help with production.
- May collect samples for lab tests.

APTITUDES

- Be able to learn the operation of various machines.
- Have average use of numbers and words.
- Be able to work within set standards.
- Have average physical coordination and use of hands and fingers.
- Be able to handle routine, repetitive activities.
- Have average space and form perception.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week; shift work may be required including evenings and weekends.
Employers
Mining and quarrying companies, grain and feed mills, dairies, and manufacturers.

CONSIDERATIONS

- Job involves lifting of heavy loads weighing up to 100 pounds, stooping, reaching, and standing.
- Work areas may be noisy and workers face hazards of working around fast moving machines.

NEBRASKA EMPLOYMENT

About 860 machine operators helpers are projected to be employed by 1991.

WAGES

In Nebraska, wages for machine operators helpers range from a reported low of $5.80 per hour to a high of $8.60 per hour. Annual salaries for workers employed full time range between $12,064 and $17,888. Nationally, salaries range between $8,060 and $26,500.

EMPLOYMENT GROWTH

Nebraska
Somewhat Favorable

National
Somewhat Favorable

Factors

- Employment outlook is influenced by increased automation and the growth or decrease in manufacturing.

PREPARATION

SKILLS

- Knowledge of machine operations.
- Knowledge of safety regulations.
- Mechancial skills.
- Skills in keeping simple records.

TRAINING

- Some employers prefer to hire high school graduates.
- New workers learn their skills on the job.
- Training in some realted occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Trainings

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in shop, math, and courses related to the specific field of work such as agriculture and home economics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 321, 364, 366, 391, 402, 443, and 889.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.

8646 SURVEYOR HELPERS

OCCUPATIONAL DESCRIPTION

Surveyors helpers work with survey crews to measure land or water areas and collect information for maps and charts. They do much of the physical work involved in surverying. DOT 869.567-010

HOLLAND CODE

RCS (Realistic, Conventional, Social)

NCIS RELATED OCCUPATIONS

1643	Land Surveyors
8618	Machine Operator Helpers

WORK ACTIVITIES

- Clean brush and debris from survey lines.
- Carry equipment and tools from place to place.
- Cut and mark stakes and drive them into the ground.
- Measure distances between survey points.
- Hold and move rods or targets so that survey workers can sight on them.
- Call out measurement readings.
- Record information in a notebook.

APTITUDES

- Be able to learn the methods and equipment used in surveying.
- Have average use of numbers.
- Be able to do routine, repetitive work accurately.
- Have average use of hands and good eyesight and hearing.
- Be able to see slight differences in objects and have good space and form perception.
- Be able to work as part of a team.

WORK SETTING

Environment

Work outdoors; may work out in all types of weather; may travel long distances to work sites.

Hours

Work 40 hours a week; may work longer hours during warm weather; may be subject to seasonal layoffs.

Employers

Engineering and land surveying firms, construction companies, government agencies, utility companies, and architectural firms.

CONSIDERATIONS

- Workers must be able to stoop, kneel, crouch, crawl, stand for long periods, walk long distances, and lift medium loads weighing to 50 pounds.

NEBRASKA EMPLOYMENT

About 3,160 construction trades helpers are projected to be employed by 1991. Surveyors helpers are included in this group.

WAGES

Wages for surveyor helpers range between $7.00 and $8.60 per hour in Nebraska. Annual salaries for workers employed full time range between $14,560 and $17,472. Nationally, salaries range between $11,500 and $19,500 a year depending on training and experience.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National

Favorable

Factors

- Factors which contribute to the growth in this occupation are the following; expansion of state and federal highway improvements, of urban renewal programs, of industrial and business firms, and of demand for land and nautical maps and charts.
- Growth may be limited by new electronic equipment that reduces the time involved in completing surveys.

PREPARATION

SKILLS

- Knowledge of surveying techniques and equipment.
- Skills in recordkeeping.

- Skills in making precise measurements.
- Skills in doing mathematical calculations.

TRAINING

- The minimum educational requirement is a high school diploma.
- Some surveyors helpers learn their skills on the job.
- Some employers prefer to hire applicants who have training in surveying or engineering technology.
- Training in several related occupations may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

253	Engineering Technologies
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, trignometry, calculus, and drafting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 868.
Guide for Occupational Exploration (2nd ed., 1984), pp. 262-275.

SCHOOLS

11959	Hawkeye Institute of Technology
22803	Metropolitan Community College
22708	Southeast Community College-Beatrice Campus
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
21821	University of Nebraska at Omaha
21718	University of Nebraska-Lincoln
21622	Wayne State College

8650 EXTRACTIVE HELPERS

OCCUPATIONAL DESCRIPTION

Extractive helpers assist workers who drill oil wells or blast, cut, or move materials to be mined.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Clean-Out-Driller Helpers (930.664-014)
Blaster Helpers (859.687-010)
Driller Helpers (930.666-010)
Rotary-Driller Helpers (930.684-026)
Gravity Prospecting Observer Helpers (939.663-010)

NCIS RELATED OCCUPATIONS

6474	Earth Drillers
6520	Oil Well Drillers
8618	Machine Operator Helpers

WORK ACTIVITIES

- Unload and load materials.
- Furnish workers with materials, tools, and supplies.
- Clean work area, machines, and equipment.
- Carry explosive devices, connect wires to firing devices and charges, and set off explosive charges.
- May operate equipment to clean oil or gas wells.
- May use tools to assist drilling equipment.
- May set up instruments, drive trucks, or repair machinery.

APTITUDES

- Be able to learn the methods of drilling, blasting, and mining.
- Have average space and form perception, physical coordination, and use of hands.
- Be able to pay attention to details.
- Be able to handle repetitive, routine activities.
- Be able to work within set standards.

WORK SETTING

Environment
    Work outdoors.
Hours
    Work 40 hours a week; longer hours may be required during the warm seasons.
Employers
    Oil companies, companies that drill or clean oil and gas wells, mining and quarrying companies, and construction companies.

CONSIDERATIONS

- Workers must be in good physical condition to do climbing, stooping, reaching, carrying, and lifting of heavy loads weighing from 50 to 100 pounds.
- Workers are often exposed to noise and to the possibility of explosions, burns, or injuries from tools.

NEBRASKA EMPLOYMENT

About 20 extractive helpers are projected to be employed by 1991.

WAGES

Wages for extractive helpers in Nebraska range between $4.00 and $7.30 per hour. Annual wages for workers employed full time range between $8,320 and $15,184. Nationally, salaries tend to parallel those of Nebraska.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- The employment outlook is influenced by energy demands and the need to increase our nation's energy supplies.

PREPARATION

SKILLS

- Knowledge of drilling, blasting, and mining methods and equipment.
- Skills in using hand and power tools.
- Mechanical skills.

401

TRAINING

- No special education is needed for this job.
- Helpers are trained on the job under the supervision of experienced workers.
- Training in a related occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in construction, shop, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 854, 912, and 914.
Guide for Occupational Exploration (2nd ed., 1984), pp. 262-275.

8710 CONSTRUCTION LABORERS

OCCUPATIONAL DESCRIPTION

Construction laborers do much of the routine physical work on all types of construction projects. They also help to tear down buildings and other structures.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Demolition Specialists (737.687-034)
Construction or Leak Gang Laborers (862.684-014)
Cleaners (869.687-018)
Construction Workers II (869.687-026)

NCIS RELATED OCCUPATIONS

6479	Construction Workers
7633	Sawing Machine Operators

WORK ACTIVITIES

- Put up scaffolding and set braces to support structures.
- Clean work areas.
- May paint surfaces, dig holes, mix and spread concrete, and clean tools.
- Unload materials and equipment and take them to other workers.
- Do any other jobs to help constuction workers.

APTITUDES

- Be able to learn the duties related to construction work.
- Have average use of words.
- Be able to do precise work.
- Have average space and form perception, physical coordination, and use of hands.

WORK SETTING

Environment
Work outdoors; may work outdoors in all kinds of weather.

Hours
Work 40 hours a week; longer hours may be required during warm season; may be subject to seasonal layoffs.

Employers
Construction firms, government agencies, utility companies, and railroad companies.

CONSIDERATIONS

- Work involves stooping, climbing, reaching, and lifting heavy loads weighing 50 to 100 pounds.
- Workers are exposed to possible injury and noise and vibration from equipment.

NEBRASKA EMPLOYMENT

About 3,160 construction laborers are projected to be employed by 1991.

WAGES

Wages for construction laborers range between a reported low of $5.22 per hour to a high of $9.78 per hour. The median hourly wage for all construction laborers in Nebraska is $7.03 per hour. Annual salaries for workers employed full time range between $10,857 and $20,342. Nationally, salaries span a range between $8,060 and $26,520 a year. Construction laborers may earn a high hourly wage but lose work time due to bad weather and declines in business.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Somewhat Favorable
Factors
- The employment outlook depends on the level of residential and commerical construction, and the public funds available for construction and maintenance.
- High turnover will create many job openings.

PREPARATION

SKILLS

- Knowledge of construction methods, materials, and operations.

- Skills in using construction tools and equipment.
- Knowledge of safety practices.

TRAINING

- There are no specific educational requirements for this job.
- New workers are trained on the job.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in algebra, geometry, drafting, electrical/electronics, woodworking, and construction.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 727, 862, and 871.
Guide for Occupational Exploration (2nd ed., 1985), pp. 262-275.
Occupational Outlook Handbook (1990-91 ed.), p. 445.

8722 GARBAGE COLLECTORS

OCCUPATIONAL DESCRIPTION

Garbage collectors gather trash and garbage from containers along an assigned route in a city or town. They load trash and garbage into a truck to be taken to a dump. DOT 909.687-010

HOLLAND CODE

RES (Realistic, Enterprising, Social)

NCIS RELATED OCCUPATIONS

8213	Heavy Truck Drivers

WORK ACTIVITIES

- Drive a garbage truck.
- Move containers of garbage to truck and empty them onto the truck.
- May start hosting device that lifts garbage bin on rear of truck and dumps garbage into truck.
- May empty trash from truck at dump or landfill.

APTITUDES

- Be able to learn to drive a garbage truck and operate hoisting equipment.
- Have average physical coordination and use of hands.
- Be able to handle repetitive, routine tasks.
- Be able to judge distances.

WORK SETTING

Environment
    Work outdoors in all kinds of weather.
Hours
    Work 40 hours a week; workday may begin early in the morning.
Employers
    Garbage collecting companies and city government.

CONSIDERATIONS

- Collectors must be in good physical condition to do stooping, reaching, and lifting of heavy loads weighing from 50 to 100 pounds.
- Workers must be able to adjust to unpleasant fumes, odors, and sights coming from the garbage.
- Valid state driver's license is required.

NEBRASKA EMPLOYMENT

About 650 garbage collectors are projected to be employed by 1991.

WAGES

In Nebraska, wages for garbage collectors range between $4.10 and $9.60 per hour. Annual salaries for workers employed full time range between $8,528 and $19,968 a year. Nationally salaries are somewhat higher than Nebraska salaries at $8,000 to $26,520 a year.

EMPLOYMENT GROWTH

Nebraska
    Favorable
National
    Somewhat Favorable
Factors
- Growth in the population and industry will increase garbage collection and job opportunities.
- The use of automated forms of trash collecting is growing.

PREPARATION

SKILLS

- Skills in driving a garbage truck and operating hoisting equipment.
- Knowledge of traffic laws and safety practices.

TRAINING

- No special education is needed for this job.
- Collectors are trained informally on the job.

EDUCATIONAL PROGRAM

632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include drivers' education, shop, and auto mechanics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 879.
Guide for Occupational Exploration (2nd ed., 1984), pp. 262-275.

8724 STOCK HANDLERS AND BAGGERS

OCCUPATIONAL DESCRIPTION

Stock handlers and baggers receive and sort materials, supplies, and groceries and prepare them for delivery to work areas, storage areas, or customers' cars.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Baggers (920.687-014)

NCIS RELATED OCCUPATIONS

4753	Traffic, Shipping, and Receiving Clerks
4754	Stock and Inventory Clerks
8726	Freight, Stock, and Material Movers.
8761	Hand Packers and Packagers
8769	Manual Workers

WORK ACTIVITIES

- Unwrap, mark, and lay out materials received.
- Sort and stack materials according to work orders.
- Deliver materials or equipment to workers using handtrucks.
- Bag groceries and carry to customer's car.
- Collect and return shopping carts.
- Replace checkout counter supplies.
- Clean store areas.
- Stack goods on counters.

APTITUDES

- Be able to learn to handle, sort, and bag materials.
- Have average use of words.
- Be able to handle repetitive, routine tasks.
- Have average physical coordination and use of hands.
- Be able to pay attention to details.

WORK SETTING

Environment

Work indoors and outdoors in all kinds of weather.

Hours

Work 20 to 40 hours a week; part-time work available; may include evenings, weekends, and holidays.

Employers

Manufacturers, grocery stores, retail stores, hospitals and other institutions, and government agencies.

CONSIDERATIONS

- Job involves standing for long periods, reaching, stooping, and lifting medium loads weighing 25 to 50 pounds.

NEBRASKA EMPLOYMENT

About 4,080 hand packers are projected to be employed by 1991.

WAGES

In Nebraska, wages for stock handlers and baggers range between $3.80 per hour and $4.10 per hour. Annual salaries for workers employed full time range between $7,904 and $8,528. Nationally, annual salaries range between $8,000 and $20,800 for all workers in this occupation.

EMPLOYMENT GROWTH

Nebraska

Unfavorable

National

Somewhat Favorable

Factors

- Most openings will result from replacement needs in this occupation that has a high turnover rate.
- There usually are more people applying for these positions than the number of jobs available.

PREPARATION

SKILLS

- Skills in sorting and bagging materials and groceries.
- Skills in pricing items and stocking shelves.
- Skills in meeting and dealing with the public.

TRAINING

- No special education is needed for this job.
- Many of these workers have not yet completed high school.
- Workers are trained informally on the job.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in business math, speech, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 895.
Guide for Occupational Exploration (2nd ed., 1984), pp. 504-507.

8725 MACHINE FEEDERS AND OFFBEARERS

OCCUPATIONAL DESCRIPTION

Machine feeders and offbearers feed materials into machines and remove finished products from them. Usually, the machines run automatically or are operated by other workers. The types of materials they load and unload may include paper, plastic, metal, glass, cloth, food, or wood.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Washing-Machine Loaders-and-Pullers (361.686-010)
Transfer Operators (921.685-066)
Unscramblers (921.685-070)
Carton-Counter Feeders (921.686-010)
Conveyor Feeder-Offbearers (921.686-014)

NCIS RELATED OCCUPATIONS

8618	Machine Operators Helpers
8769	Manual Workers

WORK ACTIVITIES

- Pick up and place materials onto machines.
- Dislodge jams by hand or pole.
- Remove products from discharge end.
- Stack materials on trays, pallets, or handtrucks.
- May inspect materials for damage or defects.
- May stencil, tag, stamp, or write identifying information on packaged products.

APTITUDES

- Be able to learn processes of machines.
- Have average space and form perception, physical coordination, and use of hands.
- Be able to handle repetitive, routine tasks.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week; may require shift work that includes evenings and weekends.
Employers
Manufacturers, trucking companies, wholesale firms, warehouses, mail order companies, and government agencies.

CONSIDERATIONS

- Job involves stooping, reaching, standing for long periods, and lifting medium loads weighing up to 50 pounds.
- Workers may be injured by fast moving machinery.

NEBRASKA EMPLOYMENT

About 850 machine feeders and offbearers are projected to be employed by 1991.

WAGES

Wages for machine feeders and offbearers average between $4.10 and $5.90 per hour. Annual salaries for workers employed 40 hours a week range between $8,528 and $12,272. Nationally, salaries range from $8,000 to $26,520 a year.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Unavailable
Factors
- Employment outlook is influenced by the growth in industrial production and retail trade.
- Increased use of automated machinery may limit growth.

PREPARATION

SKILLS

- Knowledge of safety practices.
- Skills in operating machines.

TRAINING

- No special training is needed for this job.
- These workers learn their work skills informally on the job.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in shop.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 905.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.

410

8726 FREIGHT, STOCK, AND MATERIAL MOVERS

OCCUPATIONAL DESCRIPTION

Freight, stock, and material movers load and unload materials from trucks, railroad cars, containers, machines, and storage areas. They work in a wide variety of industries and settings, and their jobs range from dumping grain or coal into railroad cars to positioning cameras and other equipment for movie productions.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Concrete-Mixing Plant Laborers (579.665-014)
Lumber Straighteners (669.687-018)
Truck-Driver Helpers (905.687-010)
Van-Driver Helpers (905.687-014)
Line-Service Attendants (912.687-010)
Loader Helpers (914.687-014)
Lumber Handlers (922.687-070)
Material Handlers (929.687-030)
Military Cargo Specialists (M87260)

NCIS RELATED OCCUPATIONS

4754	Stock and Inventory Clerks
8724	Stock Handlers and Baggers
8761	Hand Packers and Packagers
87692	Stores Laborers

WORK ACTIVITIES

- Identify materials or containers to be moved from written or oral instructions.
- Move materials to storage, worksites, or designated areas using hand trucks, electric dollies, wheelbarrows, or other devices.
- Attach identifying tags to materials and sort them in bundles.
- Package materials to prevent damage in transit.
- May count, weigh, and record number of units being moved or handled.

APTITUDES

- Be able to learn the processes of loading, sorting, and labeling materials.
- Have average use of numbers and words.
- Be able to handle repetitive, routine activities.
- Have average physical and eye-hand coordination and use of hands.
- Have average space and form perception.

WORK SETTING

Environment
Work indoors and outdoors; may work outdoors in all kinds of weather.

Hours
Work 40 hours a week; may require shift work including evenings and weekends.

Employers
Manufacturers who have warehouses, freight companies, railroad companies, trucking firms, construction companies, lumber companies, mining and quarrying firms, mail order houses, warehouses, and government agencies.

CONSIDERATIONS

- Job has high physical demands including stooping, reaching, and carrying loads weighing up to 100 pounds.
- Movers may be exposed to noise and vibration and physical hazards. Many movers are union members.

NEBRASKA EMPLOYMENT

About 22,610 freight, stock, and material movers are projected to be employed by 1991.

WAGES

Wages for freight, stock and material movers average between $4.10 and $5.90 per hour in Nebraska. Annual salaries for workers employed 40 hours a week range between $8,528 and $12,272. Nationally salaries range from $8,000 to $26,520 a year.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Somewhat Favorable

Factors

- The employment outlook depends on an expansion of shipping activity, replacement of persons who leave this occupation, and rate of technological change.

PREPARATION

SKILLS

- Skills in operating, loading, and unloading equipment and machinery.
- Knowledge of safety practices.
- Knowledge of materials handling procedures.
- Skills in reading and understanding instructions.

TRAINING

- No special training is required for this occupation.
- Training is usually given on the job by the supervisor or experienced worker.

EDUCATIONAL PROGRAM

632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, basic math, and shop.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 452, 907, and 910.
Guide for Occupational Exploration (2nd ed., 1984), pp. 262-275.

412

8730 GARAGE AND SERVICE STATION ATTENDANTS

OCCUPATIONAL DESCRIPTION

Garage and service station attendants service cars and other vehicles. Most work in auto service stations, but some service vehicles owned by business or government.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Automobile-Service-Station Attendants (915.467-010)
Automobile-Self-Serve-Service-Station Attendants (915.467-010)
Gas-and-Oil Servicers (915.587-010)
Industrial-Garage Servicers (915.687-014)
Lubrication Servicers (915.687-018)
Automobile Detailers (915.687-034)

NCIS RELATED OCCUPATIONS

6111 Automobile Mechanics

WORK ACTIVITIES

- Fill gas tank according to customer's request.
- Check oil and water and add needed amounts.
- Wash windshields.

APTITUDES

- Be able to learn the various tasks used to service an automobile.
- Have average use of numbers and words.
- Be able to work with the public.
- Have average coordination and use of hands.
- Be able to see slight differences in objects.
- Be able to do a variety of tasks.

WORK SETTING

Environment

Work indoors and outdoors.

Hours

Work 40 hours a week; schedule may include weekends and evenings; part-time work is available.

Employers

Service stations, wholesale petroleum dealers, auto repair shops, auto service firms, government agencies, large businesses, and educational institutions.

CONSIDERATIONS

- Workers may lift medium loads weighing up to 50 pounds.
- Work involves standing for long periods, some stooping, and exposure to gas fumes.

NEBRASKA EMPLOYMENT

About 3,000 garage and service station attendants are projected to be employed by 1991.

WAGES

Wages for garage and service station attendants in Nebraska average between $3.80 and $4.80 per hour. Yearly wages for workers employed 40 hours a week range between $7,904 and $9,984 a year. Nationally, salaries range from $8,000 to $15,600 a year.

EMPLOYMENT GROWTH

Nebraska

Favorable

National

Somewhat Favorable

Factors

- Employment growth has been influenced by the change to self-service gas stations and the use of cars that get better gas mileage.
- Most job openings result from replacement needs in this large occupation that has a high turnover rate.

PREPARATION

SKILLS

- Knowledge of sales techniques and how an automobile works.
- Mechanical skills.
- Skills in making change and keeping business records.
- Knowledge of local roads, highways, and points of interest.

TRAINING

- There are no specific educational requirements for this occupation.
- Most attendants learn their skills through informal on-the-job training.
- Some oil companies offer training programs.
- Training in a related occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

631 Apprenticeship Training
632 On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in speech, business math, marketing, and auto mechanics.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 889-890.
Guide for Occupational Exploration (2nd ed., 1984), pp. 240-255.

414

8761 HAND PACKERS AND PACKAGERS

OCCUPATIONAL DESCRIPTION

Hand packers and packagers wrap up materials or products manually. They work in a variety of industries and settings and work with a wide range of materials and products from food to manufactured products.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)_

SPECIALTIES

Packing-Line Workers (753.687-038)
Craters (920.484-010)
Hand Packagers (920.587-018)
Agricultural Produce Packers (920.687-134)
Locker-Plant Attendants (922.684-010)
Hand Bander (929.687-058)

NCIS RELATED OCCUPATIONS

6871	Butchers and Meat Cutters
8724	Stock Handlers and Baggers
8726	Freight, Stock, and Material Movers
8769	Manual Workers

WORK ACTIVITIES

- Clean packaging containers and put together cartons.
- May start, stop, and control speed of conveyor belts.
- Put or pour product into containers.
- Weigh containers and adjust quantities.
- Nail, glue, or close and seal containers.
- Label containers or products.
- Sort products or filled containers.
- Inspect products and containers during packaging.
- Record weight, time, and date packaged.

APTITUDES

- Be able to learn packaging processes.
- Have average use of words and numbers.
- Be able to handle routine, repetitive activities.
- Have average physical and eye-hand coordination and use of hands and fingers.
- Be able to see slight differences in objects and have average space and form perception.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; may require shift work including evenings and weekends.
Employers
    Manufacturers, food processing companies, printing companies, large businesses, orchards, grocery stores, and mail order companies.

CONSIDERATIONS

- Job requires standing for long periods of time, reaching, and lifting medium loads weighing up to 50 pounds.

NEBRASKA EMPLOYMENT

About 4,080 hand packers and packagers are projected to be employed by 1991.

WAGES

In Nebraska, wages for hand packers and packagers average between $3.80 and $8.50 per hour. Wages vary according to the size and type of employer. Annual salaries for workers employed 40 hours a week average between $7,904 and $17,680. Nationally, salaries range between $8,300 and $20,800 a year.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- The outlook depends on the activity level of businesses that use hand packers and packagers and automation in these industries.
- The majority of job openings will occur to replace workers who leave the occupation.

PREPARATION

SKILLS

- Knowledge of packaging equipment and processes.
- Skills in following directions.
- Skills in keeping records.

TRAINING

- No special education or training is required for this occupation.
- Workers are trained informally on the job.
- Training in related occupations may be obtained thorugh apprenticeship.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, business math, and shop.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 745-746, 893, and 897.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.

8769 MANUAL WORKERS

OCCUPATIONAL DESCRIPTION

Manual workers perform tasks that do not require special training. They generally work with their hands in a wide variety of industries and settings. Their work ranges from hand delivering phone books to homes to cleaning floors and equipment in a plant.

HOLLAND CODE

REC (Realistic, Enterprising, Conventional)

SPECIALTIES

Advertising-Material Distributors (230.687-010)
Laundry Laborers (361.687-018)
Folders (369.687-018)
Foundry Workers (519.687-022) (97691)
Animal Stunners (525.687-114)
Cheesemaking Laborers (529.686-050)
Laborers (529.687-130)
Chemical Processing Laborers (559.687-050)
Prestressed Concrete Laborers (575.687-018)
Concrete Plant Laborers (579.686-010)
Grinding and Polishing Laborers (705.687-014)
Woodworking-Shop Hands (769.687-054)
Canvas Shop Laborers (789.687-090)
Hot Air Furnace-Installer-and-Repairer Helpers (869.687-030)
Airport Maintenance Laborers (899.687-014)
General Laborers (909.687-014)
Baggage Handlers (910.687-010)
Markers II (920.687-126)
Stores Laborers (922.687-058) (87692)
Salvage Laborers (929.687-022)
Powerhouse Laborers (952.665-010)

NCIS RELATED OCCUPATIONS

8724	Stock Handlers and Baggers
8725	Machine Feeders and Offbearers
8761	Hand Packers and Packagers

WORK ACTIVITIES

- Tend machines.
- Load and unload materials.
- Cut materials to size for further processing.
- Deliver or hand out products.
- Sort, fold, stack, and weigh items.
- Clean work areas and equipment.
- Move materials from place to place.

APTITUDES

- Be able to learn the skills involved with the occupation.
- Have average physical coordination and use of hands.
- Be able to handle routine, repetitive tasks.

WORK SETTING

Environment
    Work indoors.
Hours
    Work 40 hours a week; shift work may be required including nights and evenings; part-time work may be available.
Employers
    Manufacturers, wholesale firms, laundries, dry cleaners, meatpacking and food processing plants, and companies that provide business services.

CONSIDERATIONS

- Most work involves standing for long periods, reaching, stooping, and lifting medium loads weighing up to 50 pounds.

NEBRASKA EMPLOYMENT

About 12,330 manual workers are projected to be employed by 1991.

WAGES

Wages for manual workers average between $3.80 and $5.90 per hour in Nebraska. Yearly wages for workers employed 40 hours a week range between $8,112 and $12,272. Nationally, yearly wages for all workers in this classification range between $8,000 and $15,000.

EMPLOYMENT GROWTH

Nebraska
    Unfavorable
National
    Somewhat Favorable
Factors
- The employment outlook in most of these jobs is influenced by economic conditions.
- Most openings will result from replacement needs.
- Growth may be limited by automation.

417

PREPARATION

SKILLS

- Skills in operating the machines and equipment.
- Knowledge of safety practices.
- Skills in following oral or written instructions.

TRAINING

- No special education or training is required for this occupation.
- Beginning workers receive their training on the job from experienced workers.

EDUCATIONAL PROGRAM

631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include basic math and English and other requirements vary with the specific job.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 191, 245, 313, 347, 365, 879, 882, and 907.
Guide for Occupational Exploration (2nd ed., 1984), pp. 233-239 and 356-442.

87691 FOUNDRY WORKERS

OCCUPATIONAL DESCRIPTION

Foundry workers pour melted metal into molds, remove castings from molds, and move and clean equipment and work areas in foundries. DOT 519.687-022

HOLLAND CODE

RES (Realistic, Enterprising, Social)

NCIS RELATED OCCUPATIONS

7342	Molding and Casting Machine Setup Operators
7542	Molding and Casting Machine Operators

WORK ACTIVITIES

- Assemble flasks, mix sand, and shovel sand in the flasks.
- Spray binder on surface of sand molds and dry surface with blowtorch.
- Fit together, clamp, and unclamp sections of molds.
- Carry melted metal and pour into molds.
- Break mold from hardened metal, sort castings, and prepare them for use.
- Clean equipment and prepare it for next use and clean work areas.

APTITUDES

- Be able to learn the processes of making metal castings.
- Have average use of words.
- Be able to see differences in shapes and textures.
- Have average physical and eye-hand coordination and use of hands.
- Be able to handle routine, repetitive activities.
- Be able to work within set standards.

WORK SETTING

Environment
Work indoors.
Hours
Work 40 hours a week; may require shift work including nights and weekends.
Employers
Foundaries and manufacturers of metal products.

CONSIDERATIONS

- Work involves standing for long periods, reaching, and carrying loads weighing up to 25 pounds.
- Workers are often exposed to heat, smoke, fumes, and hazards.
- Many foundry workers belong to unions.

NEBRASKA EMPLOYMENT

About 110 foundry workers are projected to be employed by 1991.

WAGES

Wages for foundry workers vary according to the size and location of the foundry as well as the amount of training completed by and the union affiliation of the worker. In Nebraska, annual earnings average between $10,608 and $15,288. Nationally, the average wage for workers in the metal trades is $14.61 per hour or approximately $30,000 a year at full time.

EMPLOYMENT GROWTH

Nebraska
Unfavorable
National
Somewhat Favorable
Factors

- This occupation is sensitive to changes in the economy.
- Automation of foundries has decreased demand for these workers.
- Most foundries are concentrated in states such as Michigan, Indiana, Illinois, and Iowa.

PREPARATION

SKILLS

- Knowledge of the processes used in metal casting.
- Knowledge of the characteristics of metal.
- Knowledge of safety practices.
- Mechanical skills.

TRAINING

- Some employers require applicants to be high school graduates.
- Most foundry workers learn their skills on the job.
- A few employers require some formal training in metal working at trade schools or community colleges.
- Training in a speciality occupation may be obtained through apprenticeship training.

EDUCATIONAL PROGRAM

295	Metal Work
631	Apprenticeship Training
632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in advanced math, general science, physics, chemistry, drafting, and metal working.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 313.
Guide for Occupational Exploration (2nd ed., 1984), pp. 356-442.

SCHOOLS

22316	Central Community College-Grand Island Campus
22501	Central Community College-Hastings Campus
22307	Central Community College-Platte Campus
22803	Metropolitan Community College
22304	Mid-Plains Community College
22306	Northeast Community College
22711	Southeast Community College-Lincoln Campus
22512	Southeast Community College-Milford Campus
22205	Western Nebraska Community College-Scottsbluff Campus
22214	Western Nebraska Community College-Sidney Campus

87692 STORES LABORERS

OCCUPATIONAL DESCRIPTION

Stores laborers do a variety of tasks to receive, store, and distribute materials, tools, equipment, and products within a warehouse or storeroom area. DOT 922.687-058

HOLLAND CODE

RES (Realistic, Enterprising, Social)

NCIS RELATED OCCUPATIONS

4754	Stock and Inventory Clerks
8726	Freight, Stock, and Material Movers

WORK ACTIVITIES

- Determine items to be moved, gathered, or distributed by reading production schedules and customer's, work, or shipping orders.
- Take materials from receiving or production areas to other given areas using hand trucks.
- Sort and place items on racks or shelves.
- Open bales, crates, and other containers.
- Weigh or count items for distribution.
- Keep records or inventory.

APTITUDES

- Be able to learn the duties involved in working in a storeroom.
- Have average use of words and numbers.
- Be able to handle routine, repetitive tasks.
- Have average physical coordination and use of hands.
- Be able to keep records.

WORK SETTING

Environment
  Work indoors.
Hours
  Work 40 hours a week; may require shift work including nights and weekends.
Employers
  Manufacturers, wholesale companies, retail stores, educational institutions, government agencies, and printing firms.

CONSIDERATIONS

- Job involves reaching, walking, and carrying medium loads weighing up to 50 pounds.

NEBRASKA EMPLOYMENT

About 12,330 manual laborers are projected to be employed by 1991. Stores laborers are included in this group.

WAGES

In Nebraska, wages for stores laborers average between $4.10 and $5.90 per hour. Annual earnings for workers employed full time range between $8,528 and $12,272. Nationally, the average salary for all stores laborers is $16,000-$17,000 a year.

EMPLOYMENT GROWTH

Nebraska
  Unfavorable
National
  Favorable
Factors
- Growth in manufacturing and business produces a need for more of these workers.

PREPARATION

SKILLS

- Knowledge of storeroom duties.
- Skills in reading work orders or production schedules.
- Skills in operating hand trucks.
- Skills in keeping records.

TRAINING

- No special education is needed for this job.
- Some employers may prefer to hire people who have completed high school.
- Stores laborers learn their skills informally on the job.

EDUCATIONAL PROGRAM

632	On-the-Job Training

HELPFUL HIGH SCHOOL SUBJECTS

High school subjects should include courses in English, business math, and accounting.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), p. 907.

9101 ARMED FORCES ENLISTED PERSONNEL

OCCUPATIONAL DESCRIPTION

Armed forces enlisted personnel are employed by the Army, Navy, Air Force, Marine Corps, and Coast Guard to aid in the national defense effort. A wide range of occupations are offered by the military. Some of the areas in which enlisted personnel work are administration, health services, electrical and electronics operations, development and repair, mechanics, metal working, law enforcement, security, communications, intelligence, food service, and numerous other technical and service field. Many people make the armed forces a career; some use the skills and training obtained in military service to secure civilian jobs.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Armed Forces Enlisted Personnel (378.000-000)
Military Intelligence Specialists (M91010)
Military Radar and Sonar Operators (M91011)
Military Riggers (M91012)
Military Compressed Gas Technicians (M91013)
Military Survival Equipment Specialists (M91014)
Military Boat Operators (M91015)
Military Quartermasters (M91016)
Military Seamen (M91017)
Military Air Crew Members (M91018)
Military Artillery Crew Members (M91019)
Military Infantrymen (M91030)
Military Special Operations Forces (M91031)
Military Tank Crew Members (M91032)
Military Aircraft Launch and Recovery Specialists (M91033)
Military Combat Engineers (M91034)
Military Blasting Specialists (M91035)
Military Emergency Management Specialists (M91036)
Military Non-Destructive Testers (M91037)
Military Petroleum Supply Specialists (M91038)
Military Shipfitters (M91039)

NCIS RELATED OCCUPATIONS

9102 Armed Forces Officers

WORK ACTIVITIES

- Work activities vary with each area of specialization.
- See the MILITARY CAREER INFORMATION book, the MILITARY CAREER GUIDE, or the DICTIONARY OF OCCUPATIONAL TITLES.

APTITUDES

- Have average use of words and numbers.
- Be able to make decisions.
- Have average physical coordination and use of hands and fingers.
- Be able to work with a variety of people and to work in stressful situations.

WORK SETTING

Environment

Work indoors and outdoors; working conditions vary; may work outdoors in all kinds of weather; may spend long periods of time away from home and family.

Hours

Work 40 or more hours a week; may work for longer hours including weekends.

Employers

United States Army, Navy, Air Force, Marines, and Coast Guard.

CONSIDERATIONS

- People can learn a skill while being paid wages.
- The military offers tuition assistance programs to service members and educational benefits to veterans.
- Enlisted personnel can retire after twenty years of service.
- Personnel may be exposed to risks of bodily injury and death.
- Dress restrictions may be required.
- Enlisted personnel must be in good physical condition.

NEBRASKA EMPLOYMENT

Unavailable

WAGES

Basic pay for all armed forces enlisted personnel is $650 for the first four months. After four months, the annual pay for the first pay grade or E-1, is $8,400. In addition, enlisted personnel receive free room and board or a housing and food allowance, medical and dental care, a clothing allowance, and special shopping privileges.

EMPLOYMENT GROWTH

Nebraska
  Favorable
National
  Favorable
Factors
- Increased emphasis on defense by the federal government has expanded opportunities.
- There is a surplus of applicants for certain specialty areas.
- Openings in Nebraska are limited; opportunities are best for those who are willing to relocate.

PREPARATION

SKILLS

- Skills vary with each specialization. Check related publications.

TRAINING

- About 95 percent of military personnel have at least a high school diploma or equivalent.
- Some people who have not graduated from high school are accepted to meet recruiting goals.
- Most enlisted jobs require classroom and on-the-job training, which is provided by the military.
- Programs offered by the military branches vary in length of enlistment and opportunities for specific training and assignments.
- Assignments are based on the Armed Services Vocational Aptitude Test (ASVAB).

EDUCATIONAL PROGRAM

611 Military Sciences

HELPFUL HIGH SCHOOL SUBJECTS

A strong math and science curriculum is recommended.

BIBLIOGRAPHY

Dictionary of Occupational Titles (4th ed., 1977), pp. 260-262.
Guide for Occupational Information (2nd ed., 1984), pp. 60-72.
Occupational Outlook Handbook (1990-91 ed.), p. 447.
Military Career Information (1986-87 ed.)

SCHOOLS

21801	Bellevue College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21714	Nebraska Wesleyan University
21821	University of Nebraska at Omaha
21819	University of Nebraska Medical Center
21718	University of Nebraska-Lincoln

9102 ARMED FORCES OFFICERS

OCCUPATIONAL DESCRIPTION

Armed forces officers hold leadership and supervisory positions in the Army, Navy, Air Force, Marine Corps, and Coast Guard. They have legal responsibility for preparing for and carrying out effective military operations. Military operations must be supported by intelligence (study of friend and enemy capabilities), effective delivery of supplies and maintenance of equipment, and training and administration of personnel. The armed forces employ some officers as specialists in these fields as well as in medicine, dentistry, law, and engineering. Most officers are general administrators who can supervise effectively in several areas.

HOLLAND CODE

RES (Realistic, Enterprising, Social)

SPECIALTIES

Military Intelligence Officers (M91020)
Military Ship and Submarine Officers (M91021)
Military Ship Engineers (M91022)
Military Artillery Officers (M91023)
Military Missile System Officers (M91024)
Military Infantry Officers (M91025)
Military Tank Officers (M91026)
Military Space Operations Officers (M91027)
Military Special Operations Officers (M91028)
Military Security Officers (M91029)

NCIS RELATED OCCUPATIONS

9101 Armed Forces Enlisted Personnel

WORK ACTIVITIES

- Work activities vary with each area of specialization.
- See the MILITARY CAREER GUIDE.

APTITUDES

- Have above average use of words and average use of numbers.
- Be able to move from one task to another using a variety of skills.
- Be able to lead and work with a variety of people.
- Be able to make decisions based on data and experience.
- Have average physical coordination and use of hands.

WORK SETTING

Environment
Work indoors and outdoors; varies with assignment; may work outdoors in all kinds of weather.

Hours
Off-time duty varies with assignment and location; may work for long hours including weekends; may be away from home and family for long periods of time.

Employers
United States Army, Navy, Air Force, Marines, and Coast Guard.

CONSIDERATIONS

- The military offers tuition assistance programs to officers and educational benefits to veterans.
- Officers can retire after twenty years of service.
- Work may involve extreme dangers and death for personnel especially in combat areas.
- Officers must wear uniforms, follow a strict code of personal and professional conduct, and be in good physical condition.
- Officers are given the opportunity to perform different jobs every two or three years.

NEBRASKA EMPLOYMENT

Unavailable

WAGES

Basic pay for armed forces officers, classification 0-1, is $16,066. In addition, officers receive allowances for housing, food and tax savings. Because allowances are not taxed as income, they provide a significant tax savings in addition to their cash value. Many officers receive incentive pay in addition to basic pay for certain types of duty. Special pay is also provided for officers in certain occupations, such as doctors, dentists, and veterinarians.

EMPLOYMENT GROWTH

Nebraska
  Somewhat Favorable
National
  Favorable
Factors

- Increased emphasis on the military by the federal governement has expanded opportunities.
- There is a continuing need for applicants especially those with training in engineering, physics, math, science, business management, or law.

PREPARATION

SKILLS

- Officers must have leadership and administrative skills.
- Other skills vary with specialization. Check related publications.

TRAINING

- Most officers are trained in ROTC programs.
- Some are trained at the service academies.
- Entrance into academies and ROTC programs require a high school diploma, above-average grades, recommendations, and high scores on aptitude tests.
- A small number of officers are trained at Officer Candidate Schools.
- Individuals applying to Officer Candidate Schools must have a four-year degree. Applicants already in the military must have completed advanced individual training and sixty semester hours of college coursework.

EDUCATIONAL PROGRAM

611	Military Sciences

HELPFUL HIGH SCHOOL SUBJECTS

Follow a college preparatory curriculum including computer science.

BIBLIOGRAPHY

Guide for Occupational Information (2nd ed., 1984), pp. 60-72.
Occupational Outlook Handbook (1990-91 ed.), p. 447.
Military Career Information (1986-87 ed.)

SCHOOLS

21801	Bellevue College
21803	College of Saint Mary
21504	Concordia College
21805	Creighton University
21606	Dana College
21507	Doane College
21810	Embry-Riddle Aeronautical University
21714	Nebraska Wesleyan University
21821	University of Nebraska at Omaha
21819	University of Nebraska Medical Center
21718	University of Nebraska-Lincoln

WAGE TABLE

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WAGE TABLE

Annual wages are determined by multiplying the hourly wage by 2,080 hours. **Monthly** wages are determined by dividing the annual wage by twelve. **Weekly** wages are determined by dividing the annual wage by fifty-two.

Hourly	**Weekly**	**Monthly**	**Annual**
$ 2.00	$ 80	$ 346	$ 4160
2.10	84	364	4368
2.20	88	381	4576
2.30	92	398	4784
2.40	96	416	4992
2.50	100	433	5200
2.60	104	450	5408
2.70	108	468	5616
2.80	112	485	5824
2.90	116	502	6032
3.00	120	520	6240
3.10	124	537	6448
3.20	128	554	6656
3.30	132	572	6864
3.40	136	589	7072
3.50	140	606	7280
3.60	144	624	7488
3.70	148	641	7696
3.80	152	658	7904
3.90	156	675	8112
4.00	160	693	8320
4.10	164	710	8528
4.20	168	727	8736
4.30	172	745	8944
4.40	176	762	9152
4.50	180	779	9360
4.60	184	797	9568
4.70	188	814	9776
4.80	192	831	9984
4.90	196	849	10192
5.00	200	866	10400
5.10	204	883	10608
5.20	208	901	10816
5.30	212	918	11024
5.40	216	935	11232
5.50	220	953	11440
5.60	224	970	11648
5.70	228	987	11856
5.80	232	1005	12064
5.90	236	1022	12272
6.00	240	1039	12480
6.10	244	1057	12688
6.20	248	1074	12896
6.30	252	1091	13104
6.40	256	1108	13312
6.50	260	1126	13520
6.60	264	1143	13728
6.70	268	1160	13936
6.80	272	1178	14144
6.90	276	1195	14352
7.00	280	1212	14560
7.10	284	1230	14768
7.20	288	1247	14976
7.30	292	1264	15184
7.40	296	1282	15392
7.50	300	1299	15600
7.60	304	1316	15808
7.70	308	1334	16016
7.80	312	1351	16224
7.90	316	1368	16432
8.00	320	1386	16640
8.10	324	1403	16848
8.20	328	1420	17056
8.30	332	1438	17264
8.40	336	1455	17472
8.50	340	1472	17680
8.60	344	1490	17888
8.70	348	1507	18096
8.80	352	1524	18304
8.90	356	1541	18512
9.00	360	1559	18720
9.10	364	1576	18928
9.20	368	1593	19136
9.30	372	1611	19344
9.40	376	1628	19552
9.50	380	1645	19760
9.60	384	1663	19968
9.70	388	1680	20176
9.80	392	1697	20384
9.90	396	1715	20592

Hourly	Weekly	Monthly	Annual
10.00	400	1732	20800
10.10	404	1749	21008
10.20	408	1767	21216
10.30	412	1784	21424
10.40	416	1801	21632
10.50	420	1819	21840
10.60	424	1836	22048
10.70	428	1853	22256
10.80	432	1871	22464
10.90	436	1888	22672
11.00	440	1905	22880
11.10	444	1923	23088
11.20	448	1940	23296
11.30	452	1957	23504
11.40	456	1974	23712
11.50	460	1992	23920
11.60	464	2009	24128
11.70	468	2026	24336
11.80	472	2044	24544
11.90	476	2061	24752
12.00	480	2078	24960
12.10	484	2096	25168
12.20	488	2113	25376
12.30	492	2130	25584
12.40	496	2148	25792
12.50	500	2165	26000
12.60	504	2182	26208
12.70	508	2200	26416
12.80	512	2217	26624
12.90	516	2234	26832
13.00	520	2252	27040
13.10	524	2269	27248
13.20	528	2286	27456
13.30	532	2304	27664
13.40	536	2321	27872
13.50	540	2338	28080
13.60	544	2356	28288
13.70	548	2373	28496
13.80	552	2390	28704
13.90	556	2407	28912
14.00	560	2425	29120
14.10	564	2442	29328
14.20	568	2459	29536
14.30	572	2477	29744
14.40	576	2494	29952
14.50	580	2511	30160
14.60	584	2528	30368
14.70	588	2546	30576
14.80	592	2563	30784
14.90	596	2581	30992
15.00	600	2598	31200
15.10	604	2615	31408
15.20	608	2633	31616
15.30	612	2650	31824
15.40	616	2667	32032
15.50	620	2685	32240
15.60	624	2702	32448
15.70	628	2719	32656
15.80	632	2737	32864
15.90	636	2754	33072
16.00	640	2771	33280
16.10	644	2789	33488
16.20	648	2806	33696
16.30	652	2823	33904
16.40	656	2840	34112
16.50	660	2858	34320
16.60	664	2875	34528
16.70	668	2892	34736
16.80	672	2910	34944
16.90	676	2927	35152
17.00	680	2944	35360
17.10	684	2962	35568
17.20	688	2979	35776
17.30	692	2996	35984
17.40	696	3014	36192
17.50	700	3031	36400
17.60	704	3048	36608
17.70	708	3066	36816
17.80	712	3083	37024
17.90	716	3100	37232
18.00	720	3118	37440
18.10	724	3135	37648
18.20	728	3152	37856
18.30	732	3170	38064
18.40	736	3187	38272
18.50	740	3204	38480
18.60	744	3222	38688
18.70	748	3239	38896
18.80	752	3256	39104
18.90	756	3273	39312
19.00	760	3291	39520
19.10	764	3308	39728
19.20	768	3325	39936
19.30	772	3343	40144
19.40	776	3360	40352

Hourly	Weekly	Monthly	Annual
19.50	780	3377	40560
19.60	784	3395	40768
19.70	788	3412	40976
19.80	792	3429	41184
19.90	796	3447	41392
20.00	800	3467	41600
20.10	804	3484	41808
20.20	808	3501	42016
20.30	812	3519	42224
20.40	816	3536	42432
20.50	820	3553	42640
20.60	824	3571	42848
20.70	828	3588	43056
20.80	832	3605	43264
20.90	836	3623	43472
21.00	840	3640	43680
21.10	844	3657	43888
21.20	848	3675	44096
21.30	852	3692	44304
21.40	856	3709	44512
21.50	860	3727	44720
21.60	864	3744	44928
21.70	868	3761	45136
21.80	872	3779	45344
21.90	876	3796	45552
22.00	880	3813	45760
22.10	884	3831	45968
22.20	888	3848	46176
22.30	892	3865	46384
22.40	896	3883	46592
22.50	900	3900	46800
22.60	904	3917	47008
22.70	908	3935	47216
22.80	912	3952	47424
22.90	916	3969	47632
23.00	920	3987	47840
23.10	924	4004	48048
23.20	928	4021	48256
23.30	932	4039	48464
23.40	936	4056	48672
23.50	940	4073	48880
23.60	944	4091	49088
23.70	948	4108	49296
23.80	952	4125	49504
23.90	956	4143	49712
24.00	960	4160	49920
24.10	964	4177	50128

Hourly	Weekly	Monthly	Annual
24.20	968	4195	50336
24.30	972	4212	50544
24.40	976	4229	50752
24.50	980	4247	50960
24.60	984	4264	51168
24.70	988	4281	51376
24.80	992	4299	51584
24.90	996	4316	51792
25.00	1000	4333	52000
25.10	1004	4351	52208
25.20	1008	4368	52416
25.30	1012	4385	52624
25.40	1016	4403	52832
25.50	1020	4420	53040
25.60	1024	4437	53248
25.70	1028	4455	53456
25.80	1032	4472	53664
25.90	1036	4489	53872
26.00	1040	4507	54080
26.10	1044	4524	54288
26.20	1048	4541	54496
26.30	1052	4557	54704
26.40	1056	4576	54912
26.50	1060	4593	55120
26.60	1064	4611	55328
26.70	1068	4628	55536
26.80	1072	4645	55744
26.90	1076	4663	55952
27.00	1080	4680	56160
27.10	1084	4697	56368
27.20	1088	4715	56576
27.30	1092	4732	56784
27.40	1096	4749	56992
27.50	1100	4767	57200
27.60	1104	4784	57408
27.70	1108	4801	57616
27.80	1112	4819	57824
27.90	1116	4836	58032
28.00	1120	4853	58240
28.10	1124	4871	58448
28.20	1128	4888	58656
28.30	1132	4905	58864
28.40	1136	4923	59072
28.50	1140	4940	59280
28.60	1144	4957	59488
28.70	1148	4975	59696
28.80	1152	4992	59904
28.90	1156	5009	60112

Hourly	Weekly	Monthly	Annual
29.00	1160	5027	60320
29.10	1164	5044	60528
29.20	1165	5061	60736
29.30	1172	5079	60944
29.40	1176	5096	61152
29.50	1180	5113	61360
29.60	1184	5131	61568
29.70	1188	5148	61776
29.80	1192	5165	61984
29.90	1196	5183	62192

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NCIS numbers are listed in all capital letters and the rest are specialties.

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1626	Chemical Plant Technical Directors
1626	Chemical Processes Design Engineers
8769	Chemical Processing Laborers
1626	Chemical Research Engineers
3831	CHEMICAL TECHNOLOGISTS AND TECHNICIANS
1626	Chemical Test Engineers
1845	Chemical-Laboratory Chiefs
3831	Chemical-Laboratory Technicians
4230	Chemicals and Drugs Sales Representatives
3620	Chemistry Technologists
1845	CHEMISTS
1473	Chief Bank Examiners
3971	Chief Business Programmers
3920	Chief Controllers
3020	Chief Dietitians
1625	Chief Engineers
3620	Chief Medical Technologists
1625	Chief Petroleum Engineers
3650	Chief Radiologic Technologists
5264	CHILD CARE PROVIDERS
5060	CHILD CARE WORKERS
5060	Child Monitors
5264	Children's Institution Attendants
2510	Children's Librarians
6412	Chimney Repairers
5244	Chimney Sweeps
5233	Chiropractor Assistants
2890	CHIROPRACTORS
3230	Choral Directors
1443	Christmas-Tree Contractors
5720	Christmas-Tree Farm Workers
3312	City Editors
1101	City Managers
3720	Civil Drafters
3710	Civil Engineering Technicians
1628	CIVIL ENGINEERS
1101	Civil Preparedness Officers
4782	Claim Adjusters
4782	Claim Examiners
1473	Claim Examiners
2120	Claims Adjudicators
4782	Claims Clerks I
4782	Claims Clerks II
1101	Classification and Treatment Directors
4696	Classification Clerks
8650	Clean-Out-Driller Helpers
8710	Cleaners
2042	CLERGY MEMBERS
4624	Clerk-Typists
46241	CLERK-TYPISTS
3020	Clinical Dietitians
3620	CLINICAL LABORATORY TECHNOLOGISTS
1915	Clinical Psychologists
1916	Clinical Sociologists
3220	Clothes Designers
32204	CLOTHES DESIGNERS
5213	Club Waiters/Waitresses
7343	Coaters Operators
7343	Coating Machine Operators

7669	Coating Machine Operators
1473	Code Inspectors
8218	Coin Collectors
4791	Collection and Exchange Tellers
4712	Collection Clerks
1281	COLLEGE AND UNIVERSITY ADMINISTRATORS
2201	COLLEGE AND UNIVERSITY TEACHERS
1281	College or University Business Managers
2201	College or University Department Heads
2201	College or University Faculty Members
1281	College or University Registrars
3831	Colorists
3313	Columnists/Commentators
7714	Combination Welders
8250	Commercial Airplane Pilots
3220	Commercial Designers
32202	COMMERCIAL DESIGNERS
3720	Commercial Drafters
4240	Commercial Equipment and Supplies Sales Represent.
5244	Commercial or Institutional Cleaners
6151	COMMUNICATION EQUIPMENT REPAIRERS
4152	Communications Consultants
1341	COMMUNICATIONS OPERATIONS MANAGERS
1341	Communications Superintendents
3020	Community Dietitians
2901	Community Health Staff Nurses
2032	Community Organization Workers
6151	Community-Antenna-Television Line Technicians
1310	Community-Health Nursing Directors
1430	Compensation Managers
1101	Compliance Directors
7720	Component Assemblers
3230	Composers
6465	Composition-Weatherboard Appliers
7342	Compression Molding Machine Operators
7342	Compression Molding Machine Tenders
7542	Compression Molding Machine Tenders
4612	COMPUTER OPERATORS
3971	COMPUTER PROGRAMMERS
1712	COMPUTER SYSTEMS ANALYSTS
3710	Computer-Aided Design Technicians
4240	Computers and Edp Systems Sales Representatives
6463	CONCRETE FINISHERS
8769	Concrete Plant Laborers
4751	Concrete Products Dispatchers
6463	Concrete Rubber
8726	Concrete-Mixing Plant Laborers
1320	Concrete-Mixing Plant Superintendents
8213	Concrete-Mixing Truck Drivers
6466	Concrete-Paving-Machine Operators
6463	Concrete-Stone Finishers
1353	Condominium Managers
4630	Congressional-District Aides
2520	Conservation Technicians
1472	CONSTRUCTION INSPECTORS
1472	Construction Inspectors
8710	CONSTRUCTION LABORERS
4230	Construction Machinery Sales Representatives
1330	CONSTRUCTION MANAGERS
8710	Construction or Leak Gang Laborers
1330	Construction Superintendents
6479	CONSTRUCTION WORKERS
8710	Construction Workers II
6117	Construction-Equipment Mechanics
3020	Consultant Dietitians
1101	Consumer Affairs Directors
1101	Contact Representatives
4240	Containers Sales Representatives
3210	Continuity Writers
1370	Contract Administrators
3960	Contract Clerks
1449	Contract Managers
1449	Contract Specialists
1330	Contractors
1220	Controllers
3720	Controls Designers
1351	Convention Managers
13511	Convention Managers
8725	Conveyor Feeder-Offbearers
5219	Cook Helpers
8618	Cook Helpers
5214	COOKS
5214	Cooks
4792	Copy Holders
3313	Copy Writers
6474	Core-Drill Operators
1473	Coroners
2110	Corporation Lawyers
5133	Correction Officers
1101	Correctional Agency Directors
5133	CORRECTIONAL INSTITUTION OFFICERS
3033	Corrective Therapists
4340	Cosmetics and Toiletries Salespersons
1412	Cost Accountants
1622	Cost-Analysis Engineers
1101	Council on Aging Directors
1915	Counseling Psychologists
24011	COUNSELORS
2401	Counselors
5216	COUNTER ATTENDANTS
4363	COUNTER CLERKS
23901	COUNTY HOME-DEMONSTRATION AGENTS
2390	County Home-Demonstration Agents
1412	County or City Auditors
2390	County-Agricultural Agents
23903	COUNTY-AGRICULTURAL AGENTS
1101	Court Administrators
5134	Court Deputies
5123	Crash, Fire, and Rescue Fire Fighters
8761	Craters
4152	Crating-and-Moving Estimators
1220	Credit Card Operations Managers
4642	Credit Clerks
1220	Credit Union Managers
4752	Crew Schedulers
2110	Criminal Lawyers
3890	Criminalists
3313	Critics
1739	Cryptanalysts
6466	Curb-Machine Operators
6854	Custom Shoemakers
6852	Custom Tailors
6422	Custom Van Installers
8618	Custom-Feed-Mill Operator Helpers
1473	Customs Inspectors
5132	Customs Patrol Officers
7633	Cut-Off Saw Operators
8618	Cutting-Machine-Tender Helpers

7443	Cylinder Press Operators
3620	Cytotechnologists
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5617	Dairy Farmworkers
8618	Dairy Helpers
1853	Dairy Scientists
3620	Dairy Technologists
6118	Dairy-Equipment Repairers
1352	Dance Studio Managers
3270	DANCERS
4793	DATA ENTRY KEYERS
4712	Data Processing Accounting Clerks
6154	DATA PROCESSING EQUIPMENT REPAIRERS
4793	Data Typists
4793	Data-Coder Operators
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5219	Deli Cutter-Slicers
8710	Demolition Specialists
4450	Demonstrators
4450	DEMONSTRATORS, PROMOTERS, AND MODELS
4230	Dental & Medical Equip. & Supplies Sales Repres.
5232	DENTAL ASSISTANTS
3630	DENTAL HYGIENISTS
1359	Dental Laboratory Managers
6865	DENTAL LABORATORY TECHNICIANS
2620	DENTISTS
3312	Department Editors
4030	Department Managers
1370	Department Managers
1210	Department Store Managers
1101	Deputy Insurance Commissioners
5134	Deputy Sheriffs
5134	Deputy United States Marshalls
2810	Dermatologists
3220	DESIGNERS
3720	Detail Drafters
3720	Detailers
5132	Detectives
1915	Developmental Psychologists
3690	Dialysis Technicians
3720	Die Designers
6811	Die Makers
6112	DIESEL ENGINE MECHANICS
1351	Dietary Managers
3020	Dietetic Interns
3020	Dietetic Technicians
3020	DIETITIANS
7669	Dippers
4744	Direct-Mail Clerks
1281	Directors of Admissions
2401	Directors of Counseling
2401	Directors of Guidance in Public Schools
3260	Directors of Photography
1430	Directors of Placement
1281	Directors of Student Affairs
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3330	Disk Jockeys
4751	DISPATCHERS
3920	Dispatchers
3930	Dispatchers
6864	Dispensing Opticians I
4753	Distributing Clerks
2110	District Attorneys

5512	Diversified Crops Farmers
5612	Diversified Crops Farmworkers I
5612	Diversified Crops Farmworkers II
5624	Dog Groomers
6156	Domestic Air-Conditioning Installers
4366	DOOR-TO-DOOR SALES WORKERS
3720	DRAFTERS
6479	Drapery Hangers
6852	Dressmakers
7518	Drill Press Operators
8650	Driller Helpers
7518	DRILLING AND BORING MACHINE OPERATORS
1473	Driver's License Examiners
8218	DRIVER-SALES WORKERS
8216	Drivers
20323	DRUG AND ALCOHOL COUNSELORS
7658	Dry Cleaners
8618	Dry-Kiln Operator Helpers
6424	Drywall Applicators
6424	DRYWALL INSTALLERS
8213	Dump Truck Drivers
4722	DUPLICATING MACHINE OPERATORS
4722	Duplicating-Machine Operators I
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7314	Duplicator Punch Operators
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6474	EARTH DRILLERS
6474	Earth-Boring-Machine Operators
1101	Economic Development Coordinators
1912	ECONOMISTS
3312	Editorial Assistants
3313	Editorial Writers
3312	EDITORS
1230	Education and Training Managers
2360	Education Consultants
1915	Educational Psychologists
2360	Educational Specialists
2350	Educational Therapists
1101	Election Assistants
6152	ELECTRIC MOTOR REPAIRERS
6153	Electric Powerline Examiners
4450	Electric-Gas Appliances Demonstrators
6171	Electric-Meter Repairers
6152	Electric-Motor Analysts
6152	Electric-Motor Repairers
6867	Electric-Motor-Control Assemblers
6156	Electric-Tool Repairers
3711	ELECTRICAL AND ELECTRONIC ENGINEERING TECHNICIANS
1633	ELECTRICAL AND ELECTRONIC ENGINEERS
6153	ELECTRICAL AND ELECTRONIC REPAIRERS
3720	Electrical Drafters
1472	Electrical Inspectors
6433	ELECTRICAL POWER INSTALLERS AND REPAIRERS
4210	Electrical Products Sales Engineers
6153	Electrical Repairers
1633	Electrical Test Engineers
6156	Electrical-Appliance Repairers
6156	Electrical-Appliance Servicers
1633	Electrical-Design Engineers
1633	Electrical-Research Engineers
6432	ELECTRICIANS
1843	Electro-Optical Engineers
3690	Electrocardiograph Technicians

36901	ELECTROCARDIOGRAPH TECHNICIANS
3690	Electroencephalographic Technicians
36902	ELECTROENCEPHALOGRAPHIC TECHNOLOGISTS
5253	Electrologists
1712	Electronic Data Processing Systems Analysts
3720	Electronic Drafters
6155	Electronic-Organ Technicians
4793	Electronic-Typesetting-Machine Operators
47931	ELECTRONIC-TYPESETTING-MACHINE OPERATORS
7720	Electronics Assemblers
6153	Electronics Mechanics
4210	Electronics Products and Systems Sales Engineers
7830	Electronics Testers II
1633	Electronics-Design Engineers
1633	Electronics-Research Engineers
6153	Electronics-Sales-and-Service Technicians
1633	Electronics-Test Engineers
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2320	ELEMENTARY SCHOOL TEACHERS
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1472	Elevator Inspectors
6176	ELEVATOR INSTALLERS AND REPAIRERS
1310	Emergency Medical Services Coordinators
36906	EMERGENCY MEDICAL TECHNICIANS
3690	Emergency Medical Technicians
1430	Employment Interviewers
1230	Employment Managers
1430	Employment-and-Claims Aides
2502	Encyclopedia Research Workers
2620	Endodontists
1473	Energy-Conservation Representatives
3710	ENGINEERING TECHNOLOGISTS AND TECHNICIANS
1853	Entomologists
6160	Environmental-Control-System Installer-Servicers
1473	Equal Opportunity Officers
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8214	Escort-Vehicle Drivers
3960	Escrow Officers
1919	Ethnologists
19191	Ethnologists
6479	Excavators
1351	Executive Housekeepers
13511	Executive Housekeepers
8250	Executive Pilots
4450	Exhibit-Display Representatives
1915	Experimental Psychologists
4753	Express Clerks
2390	Extension Work Instructors
5246	Exterminator Helpers
5246	Exterminators
8650	EXTRACTIVE HELPERS
1623	Extractive Metallurgists
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7339	FABRICATING MACHINE SETUP OPERATORS
1635	Facilities Mechanical-Design Engineers
2610	Family Practitioners
4230	Farm & Garden Equipment & Supplies Sales Repres.
6118	FARM EQUIPMENT MECHANICS
1443	FARM PRODUCTS PURCHASING AGENTS
5612	FARM WORKERS
6118	Farm-Equipment Mechanics II
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32501	Fashion Artists
13512	Fast Food Service Managers
1351	Fast Food Services Managers
5216	Fast-Food Workers
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7664	Feed Mixers
7662	Feed Weighers
8618	Feed-Mixer Helpers
3820	Feed-Research Aides
6479	Fence Erectors
6115	Fiberglass Auto-Body Repairers
1449	Field Contractors
6153	Field Engineers
3930	Field Engineers
5515	Field Horticulture-Specialty Growers
1250	Field Representatives
6178	Field Service Technicians
1449	Field-Contact Technicians
1622	Field-Service Engineers
4696	FILE CLERKS
4696	File Clerks I
4696	File Clerks II
1733	Financial Analysts
1220	Financial Institution Managers
1210	Financial Institution Presidents
1220	Financial Institution Treasurers
1220	Financial Institution Vice Presidents
1220	FINANCIAL MANAGERS
4124	Financial Services Sales Agents
1281	Financial-Aid Officers
4124	Financial-Report Service Sales Agents
5253	Fingernail Formers
3260	Finish Photographers
1101	Fire Chiefs
5123	FIRE FIGHTERS
1634	Fire-Protection Engineers
6412	Firebrick and Refractory Tile Bricklayers
5134	Fish and Game Wardens
5514	Fish Farmers
7512	Fittings Finishers
8250	Flight Engineers
4340	Floor Coverings Salespersons
6462	Floor Layers
3220	Floral Designers
32206	FLORAL DESIGNERS
8618	Flour-Blender Helpers
8250	Flying Instructors I
8769	Folders
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1473	Food and Drug Inspectors
1845	Food Chemists
4030	Food Concession Managers
5219	Food Order Expediters
1320	Food Processing Plant Managers
4240	Food Products Sales Representatives
4362	Food Sales Clerks
1351	FOOD SERVICE AND LODGING MANAGERS
13512	Food Service Directors
1351	Food Service Directors
1351	Food Service Managers
13512	FOOD SERVICE MANAGERS
1853	Food Technologists
18533	FOOD TECHNOLOGISTS

3831	Food Testers
8214	Food-Service Drivers
2401	Foreign-Student Advisers
1852	Forest Ecologists
18521	Forest Ecologists
5720	Forest Products Gathers
5123	Forest-Fire Fighters
5720	Forester Aides
1852	Foresters
18521	FORESTERS
1852	FORESTRY AND SOIL CONSERVATION SCIENTISTS
5720	FORESTRY WORKERS
6422	Form Builders
5213	Formal Waiters/Waitresses
5080	Foster Parents
4230	Foundry and Machine Shop Products Sales Repres.
1623	Foundry Metallurgists
8769	Foundry Workers
87691	FOUNDRY WORKERS
5216	Fountain Servers
6115	Frame Straighteners
8726	FREIGHT, STOCK, AND MATERIAL MOVERS
6172	Fretted-Instrument Repairers
1351	Front Office Managers
13511	Front Office Managers
8318	Front-End Loader Operators
5246	Fumigators
4366	Fund Raisers
8216	Funeral Car Chauffeurs
13591	FUNERAL DIRECTORS
1359	Funeral Directors
5514	Fur Farmers
8618	Furnace Helpers
6450	Furnace Installers
7544	Furnace Operators
6835	FURNITURE FINISHERS
4340	Furniture Salespersons
6853	Furniture Upholsterers

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8730	GARAGE AND SERVICE STATION ATTENDANTS
8213	Garbage Collector Drivers
8722	GARBAGE COLLECTORS
1473	Gas Inspectors
7714	Gas Welders
8730	Gas-and-Oil Servicers
6931	Gas-Engine Operators
6114	Gas-Engine Repairers
6450	Gas-Meter Installers
4644	Gate Agents
1919	Genealogists
2901	General Duty Nurses
5512	GENERAL FARMERS
5612	General Farmworkers I
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4340	General Hardware Salespersons
7820	General Inspectors
8769	General Laborers
7339	General Machine Operators
1210	GENERAL MANAGERS
4240	General Merchandise Sales Representatives
4340	General Merchandise Salespersons
4630	GENERAL OFFICE CLERKS
2610	General Practitioners
1320	General Supervisors
4712	General-Ledger Bookkeepers
1854	Geneticists
3720	Geological Drafters
1847	GEOLOGISTS
1847	Geophysical Prospectors
1847	Geophysicists
5236	Geriatric Nurse Assistants
6115	Glass Installers
6442	Glass Tinters
8618	Glass-Cutter Helpers
6464	GLAZIERS
1352	Golf Club Managers
1472	Grade Checkers
1443	Grain Broker-and-Market Operators
1443	Grain Buyers
4753	Grain Elevator Clerks
7101	GRAIN ELEVATOR SUPERINTENDENTS
7840	Grain Receivers
4153	Graphic Art Sales Representatives
3220	Graphic Designers
32201	GRAPHIC DESIGNERS
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5622	Greenskeepers II
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2032	Group Workers
5144	GUARDS
1352	Gun Club Managers
2610	Gynecologists
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5253	HAIRDRESSERS AND COSMETOLOGISTS
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7753	HAND CUTTING AND TRIMMING WORKERS
7658	Hand Launderers
8761	Hand Packagers
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7657	Hat Blockers
3401	Head Coaches
2901	Head Nurses
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5233	HEALTH AIDES
1473	Health Care Facilities Inspectors
1843	Health Physicists
3640	HEALTH RECORD TECHNICIANS
3690	HEALTH TECHNOLOGISTS AND TECHNICIANS
2120	Hearing Officers
6171	Hearing-Aid Repairers
6116	Heat and Vent Aircraft Mechanics
3713	Heat-Transfer Technicians
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1472	Heating and Refrigeration Inspectors
7544	HEATING EQUIPMENT OPERATORS
6117	HEAVY EQUIPMENT MECHANICS
8213	Heavy Truck Drivers
8213	HEAVY TRUCK DRIVERS
8250	Helicopter Pilots
4152	Herbicide Service Sales Representatives
6479	Highway Maintenance Workers
5132	Highway Patrol Pilots
1855	Histopathologists

1919	Historians
2520	Historic Sites Supervisors
4240	Hobbies and Crafts Sales Representatives
5514	Hog-Confinement-System Managers
5236	Home Attendants
2390	Home Economists
23902	HOME ECONOMISTS
3690	Home Health Technicians
2350	Home Therapy Teachers
6155	HOME-ENTERTAINMENT EQUIPMENT REPAIRERS
3401	Horse Exercisers
5617	Horse Trainers
5624	Horseshoers
4340	Horticultural and Nursery Products Salespersons
5515	HORTICULTURAL FARMERS
1853	Horticulturists
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12102	HOSPITAL ADMINISTRATORS
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6160	Hot Air Furnace Installer-and-Repairers
8769	Hot Air Furnace-Installer-and-Repairer Helpers
4240	Hotel & Restaurant Eq. & Supplies Sales Represent.
1351	Hotel and Motel Managers
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13511	HOTEL OR MOTEL MANAGERS
13511	Hotel Recreational Facilities Managers
6479	House Builders
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6422	House Repairers
5242	Housecleaners
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4340	Household Appliances Salespersons
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1353	Housing Project Managers
2032	Human Relations or Drug and Alcohol Counselors
1430	Human Resource Advisors
1628	Hydraulic Engineers
6932	Hydroelectric Station Operators
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1210	Industrial Organization Managers
1320	INDUSTRIAL PRODUCTION MANAGERS
1230	Industrial Relations Directors
3032	Industrial Therapists
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12103	INSTITUTION DIRECTORS
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8232	LOCOMOTIVE OPERATORS
1351	Lodging Facilities Managers
8730	Lubrication Servicers
6854	Luggage Repairers
4752	Lumber Estimators
8726	Lumber Handlers
8726	Lumber Straighteners
8218	Lunch-Truck Drivers
5216	Lunchroom or Coffee Shop Counter Attendants
3210	Lyricists

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6178	Machine Assemblers
8725	MACHINE FEEDERS AND OFFBEARERS
7542	Machine Molders
8618	MACHINE OPERATOR HELPERS
7662	Machine Packagers
7657	Machine Pressers
7669	Machine Sprayers
7658	Machine Washers
6178	Machinery Erectors
6813	MACHINISTS
2120	Magistrates
4793	Magnetic-Tape-Typewriter Operators
4743	MAIL CARRIERS
4744	MAIL CLERKS
4742	Mail Handlers
6174	Mail-Processing-Equipment Mechanics
6422	Maintenance Carpenters
6153	Maintenance Electricians
6813	Maintenance Machinists
6178	Maintenance Mechanics
4751	Maintenance Service Dispatchers
1342	Maintenance Superintendents
1320	Maintenance Superintendents
1330	Maintenance-of-Way Superintendents
5253	Make-Up Artists
4240	Malt Liquors Sales Representatives
1420	MANAGEMENT ANALYSTS
3312	Managing Newspaper Editors
5253	Manicurists
8769	MANUAL WORKERS
3033	Manual-Arts Therapists
6178	Manufacturer's Service Representatives
4240	Manufacturers' Representatives
1635	Manufacturing Applications Engineers
1634	Manufacturing Engineers
8769	Markers II
19121	MARKET-RESEARCH ANALYSTS I
19121	Market-Research Analysts I
1250	MARKETING AND ADVERTISING MANAGERS
4752	Material Coordinators
8726	Material Handlers
4752	Material Listers
1634	Material Schedulers
4754	Materials Clerks
1733	Mathematical Statisticians
1739	MATHEMATICIANS

7753	Meat Boners
6871	Meat Butchers
5219	Meat Cutters
7753	Meat Trimmers
7720	Mechanical Assemblers
3720	Mechanical Drafters
3713	MECHANICAL ENGINEERING TECHNICIANS
1635	MECHANICAL ENGINEERS
4210	Mechanical Equipment Sales Engineers
1635	Mechanical Equipment Test Engineers
1635	Mechanical Research Engineers
6117	Mechanical-Unit Repairers
3250	Medical and Scientific Illustrators
32501	Medical and Scientific Illustrators
52333	MEDICAL ASSISTANTS
5233	Medical Assistants
3690	Medical Laboratory Assistants
36903	MEDICAL LABORATORY TECHNICIANS
3690	Medical Laboratory Technicians
1843	Medical Physicists
1310	Medical Record Administrators
1855	MEDICAL SCIENTISTS
4622	Medical Secretaries
2032	Medical Social Workers
3620	Medical Technologists
4794	Medical-Record Clerks
5233	Medication Aides
1310	MEDICINE AND HEALTH MANAGERS
4622	Membership Secretaries
4240	Men's and Boy's Apparel Sales Representatives
4340	Men's and Boys' Clothing Salespersons
5233	Mental-Retardation Aides
32207	MERCHANDISE DISPLAYERS
3220	Merchandise Displayers
1370	Merit System Directors
6473	Metal Building Assemblers
7339	Metal Fabricators
6172	Metal-Reed Tuners
1623	Metallographers
1623	METALLURGICAL AND MATERIALS ENGINEERS
3710	Metallurgical Technicians
1846	METEOROLOGISTS
4755	METER READERS
3711	Meters Superintendents
18544	MICROBIOLOGISTS
1854	Microbiologists
3620	Microbiology Technologists
3711	Microelectronics Technicians
8213	Milk Route Drivers
7513	MILLING AND PLANING MACHINE OPERATORS
1320	Milling General Superintendents
6178	Millwrights
6178	MILLWRIGHTS
1847	Mineralogists
1624	Mines Safety Engineers
1624	MINING ENGINEERS
1624	Mining-and-Oil Well Equipment Research Engineers
1624	Mining-and-Oilfield Equipment Design Engineers
1624	Mining-and-Oilfield Equipment Test Engineers
6464	Mirror Installers
8618	Mix-Machine Feeders
8618	Mixer Helpers
7664	Mixers Operators
7664	MIXING AND BLENDING MACHINE OPERATORS
3250	Modeler
4460	Models
7542	Mold Makers
7542	MOLDING AND CASTING MACHINE OPERATORS
7342	MOLDING AND CASTING MACHINE SETUP OPERATORS
6444	Molding Plasters
5233	Morgue Attendants
4696	Morgue Librarians
4712	Mortgage-Accounting Clerks
4712	Mortgage-Loan-Computation Clerks
5253	Mortuary Beauticians
5246	Mosquito Sprayers
3250	Motion Picture Cartoonists
3240	Motion Picture Directors
3260	Motion Picture Photographers
8232	Motor Operators
4751	Motor Vehicle Dispatchers
1473	Motor Vehicle Inspectors
4240	Motor Vehicles and Supplies Sales Representatives
6932	Motor-Room Controllers
6114	Motorboat Mechanics
3401	Motorcycle Racers
34012	Motorcycle Racers
6114	Motorcycle Repairers
7830	Motorcycle Testers
1625	Mud-Analysis Well Logging Captains
1625	Mud-Analysis Well Logging District Supervisors
6111	Muffler Installers
6479	Municipal Maintenance Workers
2520	Museum Attendants
2520	Museum or Zoo Directors
2520	Museum Technicians
3230	Music Directors
2360	Music Supervisors
6172	MUSICAL INSTRUMENT REPAIRERS AND TUNERS
4340	Musical Instruments and Accessories Salespersons
3230	MUSICIANS AND COMPOSERS
	-N-
8250	Navigators
2610	Neurologists
4642	New-Accounts Clerks
3240	News Directors
3312	News Editors
4365	NEWS VENDORS
3313	Newscasters
4365	Newspaper Carriers
3312	Newspaper Editors
8218	Newspaper-Delivery Drivers
3313	Newswriters
4712	Night Auditors
4791	Note Tellers
4240	Novelties Sales Representatives
1627	NUCLEAR ENGINEERS
1627	Nuclear Equipment Design Engineers
1627	Nuclear Equipment Research Engineers
1627	Nuclear Equipment Test Engineers
3650	Nuclear Medical Technologists
7512	Numerical Control Lathe Operators
5236	Nurse Aides
29012	NURSE ANESTHETISTS
2901	Nurse Anesthetists

29011	NURSE PRACTITIONERS
2901	Nurse Practitioners
2901	Nurse-Midwives
5264	Nursery School Attendants
5236	NURSING AIDES, ORDERLIES, AND ATTENDANTS
1310	Nursing Service Directors
	-O-
2610	Obstetricians
1310	Occupational Health Nursing Directors
2901	Occupational Health Nursing Staff Nurses
3032	OCCUPATIONAL THERAPISTS
5233	Occupational Therapy Aides
5233	Occupational Therapy Assistants
52332	OCCUPATIONAL THERAPY ASSISTANTS
1473	Occupational-Safety-and-Health Inspectors
1847	Oceanographer
4630	Office Clerks
6174	OFFICE MACHINE REPAIRERS
6174	Office-Machine Servicers
4240	Office Machines Sales Representatives
1101	Office Managers
1370	Office Managers
2901	Office Nurses
7643	Offset Duplicating Machine Operators
4722	Offset-Duplicating Machine Operators
7443	Offset Press Operators I
7643	Offset Press Operators II
6520	OIL WELL DRILLERS
1625	Oil-Well Services Superintendents
8312	Operating Engineers
8312	OPERATING ENGINEERS
1341	Operations Directors
1342	Operations General Agents
1341	Operations Managers
26104	OPHTHALMOLOGISTS
2610	Ophthamologists
6864	OPTICAL GOODS WORKERS
6864	Opticians
3713	Optomechanical Technicians
3690	Optometric Assistants
36905	OPTOMETRIC ASSISTANTS
2610	OPTOMETRISTS
2620	Oral Surgeons
3230	Orchestra Conductors
5236	Orderlies
7339	Ornamental Metal Workers
6865	Orthodontic Technicians
2620	Orthodontists
3690	Orthopedic Assistant
3690	Orthotists
2610	Osteopathic Physicians
26108	OSTEOPATHS
4153	Outdoors Advertising Leasing Agents
1310	Outpatient Services Directors
4642	Outpatient-Admitting Clerks
1449	Outside Property Agents
	-P-
7662	PACKAGING AND FILLING MACHINE OPERATORS
8761	Packing-Line Workers
4694	Pages
6115	Paint Sprayer Sandblasters
6442	PAINTERS
3250	Painters (Fine Arts)
32502	PAINTERS (FINE ARTS)
3250	PAINTERS, SCULPTORS, CRAFT-ARTISTS, AND ARTISTS-PRINTMAKERS
4450	Painting Instructors
7669	PAINTING MACHINE OPERATORS
1847	Paleontologists
4240	Paper and Paper Products Sales Representatives
6443	PAPERHANGERS
3960	Paralegal Assistants
1855	Parasitologists
4744	Parcel-Post Clerks
4364	Parimutuel-Ticket Cashiers
4712	Parimutuel-Ticket Checkers
4364	Parimutuel-Ticket Sellers
4645	Park Aides
1852	Park Naturalists
1101	Park Rangers
1101	Park Superintendents
5134	Parking Enforcement Officers
5622	Parks and Grounds Groundskeepers
2032	Parole Officers
4754	Parts Clerks
4030	Parts Managers
6813	Parts Salvagers
4366	Party Plan Salesperson-Demonstrators
8113	Passenger Car Conductors
5257	Passenger Service Representatives
8233	Passenger Train Brakers
5219	Pastry Cook Helpers
5214	Pastry Cooks
3960	Patent Agents
2610	Pathologists
26101	PATHOLOGISTS
6466	PAVING EQUIPMENT OPERATORS
4440	Pawnbrokers
4366	Peddlers
2610	Pediatricians
26105	PEDIATRICIANS
2620	Pedodontists
6172	Percussion-Instrument Repairers
3831	Perfumers
3690	Perfusionists
2620	Periodonists
1230	PERSONNEL MANAGERS
1430	Personnel Recruiters
4752	Personnel Schedulers
1430	PERSONNEL SPECIALISTS
4152	Pest Control Service Sales Agents
5246	PEST CONTROL SERVICES
1625	PETROLEUM ENGINEERS
1847	Petroleum Geologists
4340	Pets and Pet Supplies Salespersons
4230	Pharmaceutical Detailers
3690	Pharmacist Assistants
3010	PHARMACISTS
1855	Pharmacologists
5233	Pharmacy Helpers
52334	PHARMACY HELPERS
1919	Philologists
5233	Phlebotomists
4340	Phonograph Records and Tape Recordings Salespersons
7642	Photocomposing Machine Operators
4722	Photocopying-Machine Operators
6842	Photoengravers

7444	PHOTOENGRAVING AND LITHOGRAPHING MACHINE SETUP OPERATORS
7444	Photoengraving Photographer
6842	Photoengraving Printers
4753	Photofinishing Laboratory Workers
3710	Photogrammetrists
6868	Photograph Retouchers
3260	PHOTOGRAPHERS
4450	Photographers' Models
6171	Photographic Equipment Technicians
6868	Photographic Process Screen Makers
6868	PHOTOGRAPHIC PROCESS WORKERS
4722	Photographic-Machine Operators
6868	Photography Colorists
3260	Photojournalists
7642	Photolettering Machine Operators
7642	Phototypesetting Operators
19191	Physical Anthropologists
1623	Physical Metallurgists
5233	Physical Therapist Assistants
52331	PHYSICAL THERAPIST ASSISTANTS
3033	PHYSICAL THERAPISTS
5233	Physical Therapy Aides
3040	PHYSICIAN ASSISTANTS
2610	PHYSICIANS
1843	PHYSICISTS
1854	Physiologists
6172	Piano Technicians
6172	Piano Tuners
6450	Pipe Fillers
6172	Pipe-Organ Tuners and Repairers
3401	Pit Stewards
5214	Pizza Bakers
7513	Planing Machine Operators
1853	Plant Breeders
1635	Plant Engineers
18545	PLANT PATHOLOGISTS
1854	Plant Pathologists
1359	Plant Protection Superintendents
6444	PLASTERERS
6811	Plastic Tool Makers
7443	Platen Press Operators
7643	Platen-Press Feeders
7343	Platers
7343	PLATING MACHINE SETUP OPERATORS
5264	Playroom Attendants
3210	Playwrights
6450	PLUMBERS AND PIPE FITTERS
1472	Plumbing Inspectors
5233	Podiatric Assistants
2830	PODIATRISTS
3210	Poets
4630	Police Aides
5132	POLICE AND DETECTIVES
1101	Police Chiefs
4630	Police Clerks
1101	Police Commissioners I
4732	Police District Switchboard Operators
5132	Police Officers I
5133	Police Officers II
1919	Political Scientists
3890	Pollution-Control Technicians
1352	Pool Managers
4742	Post-Office Clerks
4742	POSTAL CLERKS
1344	Postal Service Sectional Center Managers
4712	Posting Clerks
1344	POSTMASTERS
5514	Poultry Farmers
1853	Poultry Scientists
2701	Poultry Veterinarians
5617	Poultry-Farmworkers
6479	Poured-Concrete-Wall Technicians
6932	POWER PLANT AND SYSTEMS OPERATORS
7517	Power Press Tenders
6932	Power Reactor Operators
1633	Power System Electrical Engineers
1633	Power-Distribution Engineers
6153	Powerhouse Electricians
8769	Powerhouse Laborers
3660	Practical Nurses
6867	Precision Assemblers
6867	PRECISION EQUIPMENT ASSEMBLERS
6171	PRECISION INSTRUMENT REPAIRERS
4240	Precision Instruments Sales Representatives
2310	PREKINDERGARTEN AND KINDERGARTEN TEACHERS
2310	Preschool Teachers
1210	Presidents
7517	PRESS AND BRAKE MACHINE OPERATORS
7657	PRESSING MACHINE OPERATORS
8769	Prestressed Concrete Laborers
1282	Principals
4623	Print Shop Stenographers
7443	Printers II
4752	Printing Estimators
7643	PRINTING MACHINE OPERATORS
7443	PRINTING PRESS SETUP OPERATORS
4240	Printing Supplies Sales Represeentatives
3250	Printmakers
2901	Private Duty Nurses
5144	Private Investigators
2110	Probate Lawyers
20322	PROBATION OFFICERS
2032	Probation Officers
8618	Processor Helpers
1449	Procurement Engineers
32403	PRODUCERS
3240	Producers
1634	Product-Safety Engineers
4752	PRODUCTION AND PLANNING CLERKS
7720	Production Assemblers
7518	Production Boring Machine Operators
4752	Production Clerks
4752	Production Coordinators
7518	Production Drill Press Operators
1634	Production Engineers
7820	PRODUCTION INSPECTORS
7512	Production Lathe Operators
7714	Production Line Welders
3240	Production Managers
7513	Production Milling Machine Operators
1634	Production Planners
4792	Production Proofreaders
7840	PRODUCTION SAMPLERS AND WEIGHERS
1320	Production Superintendents
7830	PRODUCTION TESTERS
7840	Production Weighers
1635	Products Mechanical-Design Engineers
3401	Professional Athletes

34012	PROFESSIONAL ATHLETES
3401	Professional Sports Scouts
32404	PROGRAM DIRECTORS
3240	Program Directors
1370	Program Managers
4752	Progress Clerks
5244	Project-Crew Workers
6868	Projection Printers
4792	PROOFREADERS
1353	PROPERTY MANAGERS
1353	Property Managers
1370	Property-Disposal Officers
1370	Property-Utilization Officers
3210	Prose, Fiction, and Nonfiction Writers
3690	Prosthetists
2620	Prosthodontists
5236	Psychiatric Aides
5214	Psychiatric Hospital Cooks
2032	Psychiatric Social Workers
3660	Psychiatric Technicians
2610	Psychiatrists
26107	PSYCHIATRISTS
1915	PSYCHOLOGISTS
6151	Public Address Servicers
1101	PUBLIC ADMINISTRATORS
1353	Public Events Facilities Rental Managers
2360	Public Health Educators
1101	Public Health Service Officers
2620	Public-Health Dentists
1855	Public-Health Microbiologists
2032	Public Housing Comm.-Relations-&-Services Advisors
3320	PUBLIC RELATIONS SPECIALISTS
3320	Public-Relations Representatives
1101	Public Works Commissioners
3312	Publications Editors
8113	Pullman Conductors
3690	Pulmonary-Function Technicians
8618	Pumper Helpers
7314	Punch Press Operators I
7514	Punch Press Operators II
7314	Punch Press Setters
7514	PUNCHING AND SHEARING MACHINE OPERATORS
7314	PUNCHING AND SHEARING MACHINE SETUP OPERATORS
1449	Purchase-Price Analysts
1449	PURCHASING AGENTS
1449	Purchasing Agents
	-Q-
1634	Quality Control Engineers
4754	Quality-Control Clerks
1634	Quality-Control Engineers
3890	Quality-Control Technicians
3250	Quick Sketch Artists
	-R-
3401	Racehorse Trainers
3401	Racetrack Stewards
3401	Racing Secretaries and Handicappers
3650	Radiation-Therapy Technologists
3330	RADIO AND TELEVISION ANNOUNCERS
4153	Radio and Television Time Sales Representatives
3240	Radio Directors
4751	Radio Dispatchers
3930	RADIO OPERATORS
6155	Radio Repairers
3650	RADIOLOGIC TECHNOLGISTS
2610	Radiologists
1310	Radiology Administrators
3010	Radiopharmacists
3930	Radiotelegraph Operators
3930	Radiotelephone Operators
8232	Rail-Tractor Operators
8233	RAILROAD BRAKE, SIGNAL, AND SWITCH OPERATORS
8113	RAILROAD CONDUCTORS AND YARDMASTERS
1628	Railroad Engineers
1330	Railroad-Construction Directors
1852	Range Managers
3210	Readers
4123	Real Estate Appraisers
2110	Real Estate Lawyers
4123	REAL ESTATE SALES AGENTS
1353	Real-Estate Agents
4630	Real-Estate Clerks
4645	RECEPTIONISTS
3710	Recording Engineers
4696	Records Custodians
1420	Records-Management Analysts
1352	RECREATION AND ENTERTAINMENT MANAGERS
2033	Recreation Center Directors
1352	Recreation Establishment Managers
1352	Recreation Facility Managers
2033	Recreation Leaders
1101	Recreation Superintendents
1352	Recreation Supervisors
2033	RECREATION WORKERS
1430	Recruiters
6931	Refrigerating Engineers
6160	Refrigeration Mechanics
6160	Refrigeration Mechanics
6160	Refrigeration Unit Repairers
6171	Register Repairers
2901	REGISTERED NURSES
4744	Registered-Mail Clerks
4645	Registrars
4694	Registration Clerks
4642	Registration Clerks
6473	Reinforcing-Metal Workers
3313	REPORTERS
6868	Reproduction Technicians
2520	Research Assistants
2520	Research Associates
1625	Research Chief Engineers
3020	Research Dietitians
4644	RESERVATION AGENTS
1220	Reserve Officers
2401	Residence Counselors
24012	RESIDENCE COUNSELORS
4123	Residence Leasing Agents
5264	Residence Supervisors
3031	RESPIRATORY THERAPISTS
5233	Respiratory-Therapy Aides
4030	RETAIL SALES SUPERVISORS
4340	RETAIL SALESPERSON
4030	Retail Store Managers
1370	Retirement Officers
1101	Revenue Directors
8233	Road Freight Brake Couplers
8113	Road Freight Conductors

6468	Road-Oiling-Truck Drivers
6466	Road-Roller Operators
1101	Roads Supervisors
6422	Roof Assemblers I
6468	Roofer Applicators
6468	ROOFERS
6520	Rotary Derrick Operators
6520	Rotary Drillers
8650	Rotary-Driller Helpers
6422	Rough Carpenters
4753	Route-Delivery Clerks
4743	Rural-Mail Carriers
	-S-
6854	Saddle Makers
6173	Safe-and-Vault Service Mechanics
4240	Safety Apparel and Equipment Sales Representatives
1101	Safety Council Directors
1473	Safety Inspector
5219	Salad Makers
4362	Sales Attendants
4362	SALES CLERKS
4210	SALES ENGINEERS
4460	Sales Exhibitors
1250	Sales Managers
4240	SALES REPRESENTATIVES
8218	Sales Route Driver Helpers
8218	Sales Route Drivers
4123	Sales Superintendents
4153	Sales-Promotion Representatives
3320	Sales-Service Promoters
8769	Salvage Laborers
7840	Samplers
5219	Sandwich Makers
3690	Sanitarians
36904	SANITARIANS
1628	Sanitary Engineers
1473	Sanitation Inspectors
1101	Sanitation Superintendents
6151	Satellite Communications Antenna Installers
7633	SAWING MACHINE OPERATORS
5214	School Cafeteria Cooks
5264	School Child-Care Attendants
4240	School Equipment and Supplies Sales Representatives
2510	School Library Media Specialists
2901	School Nurses
1310	School of Nursing Directors
1915	School Psychologists
4622	School Secretaries
2032	School Social Workers
1210	School Superintendents
1610	School-Plant Consultants
3890	SCIENCE TECHNOLOGISTS AND TECHNICIANS
1919	Scientific Linguists
3260	Scientific Photographers
3401	Scorers
3210	Screen Writers
3250	Sculptor
7657	Seam Pressers
2330	SECONDARY SCHOOL TEACHERS
4622	SECRETARIES
4124	SECURITIES AND FINANCIAL SERVICES SALES AGENTS

4712	Securities Clerks
4124	Securities Sales Agents
4124	Securities Traders I
5144	Security Consultants
5144	Security Guards
3820	Seed Analysts
1625	Seismic Prospecting Observers
1847	Seismologists
4362	Self-Service Store Stock Clerks
4363	Self-Service-Laundry-and-Dry-Cleaning Attendants
3711	Semiconductor-Development Technicians
4751	Service Clerks
6114	Service Engine Repairers
4751	Service or Work Dispatchers
1359	SERVICE ORGANIZATIONS MANAGERS
3250	Set Illustrators
32501	Set Illustrators
6479	Sewer Line Repairers
6479	Sewer-Pipe Cleaners
7655	SEWING MACHINE OPERATORS
7655	Sewing Machine Operators
4450	Sewing Techniques Demonstrators
5244	Sextons
7314	Shear Operator I
7514	Shear Operators II
7314	Shear Setters
6824	SHEET METAL WORKERS
6424	Sheetrock Applicators
5134	SHERIFFS, BAILIFFS, AND LAW ENFORCEMENT OFFICERS
6854	Shoe Repairers
4340	Shoes Salespersons
6115	Shop Estimators
5215	SHORT-ORDER COOKS
5215	Short-Order Cooks I
5215	Short-Order Cooks II
4623	Shorthand Reporters
6479	Siders
4153	Signs and Displays Sales Representatives
4153	Signs Sales Representatives
6822	Silversmiths
18521	Silviculturists
1852	Silviculturists
3230	Singers
32302	SINGERS
1352	Skating Rink Managers
7753	Skinners
6114	SMALL ENGINE REPAIRERS
7720	Small Parts Assemblers
7720	Small Products Assemblers
6114	Small-Engine Mechanics
1915	Social Psychologists
1919	SOCIAL SCIENTISTS
4622	Social Secretaries
1916	Social Welfare Research Workers
2032	SOCIAL WORKERS
2032	Social-Services Aides
1916	SOCIOLOGISTS
6462	Soft-Tile Setters
3971	Software Technicians
1852	Soil Conservation Technicians
18522	SOIL CONSERVATIONISTS
1852	Soil Conservationists
18532	SOIL SCIENTISTS
1853	Soil Scientists

1847	Soils Engineers
1635	Solar-Energy-Systems Designers
3710	Sound Mixers
6151	Sound Technicians
5132	Special Agents
2510	Special Collections Librarians
2350	SPECIAL EDUCATION TEACHERS
2350	Special Education Work-Study Coordinators
2510	Special Library Librarians
2401	Special Services Supervisors
5214	Specialty Cooks
3710	Specification Writers
3034	Speech Pathologists
3034	SPEECH PATHOLOGISTS AND AUDIOLOGISTS
4340	Sporting Goods Salespersons
3240	Sports Directors
6118	Sprinkler-Irrigation-Equipment Mechanics
5624	Stable Attendants
1854	Staff Toxicologists
3240	Stage Directors
6811	Stamping Die Makers
5132	State-Highway Police Officers
1919	State-Historical Society Directors
4642	Statement-Request Clerks
3920	Station Air-Traffic-Control Specialists
6158	Station Installer-and-Repairers
1341	Station Managers
6931	STATIONARY ENGINEERS
4794	STATISTICAL CLERKS
1733	STATISTICIANS
4623	STENOGRAPHERS
4623	Stenotype Operators
4230	Stereo Equipment Salespersons
3260	Still Photographers
4754	STOCK AND INVENTORY CLERKS
4754	Stock Clerks
7633	Stock Graders
8724	STOCK HANDLERS AND BAGGERS
4754	Stock-Control Clerks
6822	Stone Setters
8466	Stone-Spreader Operators
8769	Stores Laborers
87692	STORES LABORERS
8318	Straddle-Truck Operators
8232	Streetcar Operators
1622	Stress Analysts
6842	Strippers
3720	Structural Drafters
1628	Structural Engineers
6473	STRUCTURAL METAL WORKERS
6473	Structural-Steel Workers
6444	Stucco Masons
7662	Stuffing Machine Operators
6422	Subassembly Assemblers
6153	Substation Electricians
6932	Substation Operators
12101	SUPERINTENDENT OF SCHOOLS
1320	Superintendents
1341	Supervisor of Communications
26106	SURGEONS I
2610	Surgeons I
4230	Surgical Appliances Salespersons
3690	Surgical Technicians
36907	SURGICAL TECHNICIANS
4642	Survey Workers
8646	SURVEYOR HELPERS
6479	Swimming Pool Installers and Servicers
8233	Switch Tenders

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6852	TAILORS AND DRESSMAKERS
5216	Take Out Waiters/Waitresses
4694	Talking Books Library Clerks
8466	Tamping-Machine Operators
8213	Tank Truck Drivers
6155	Tape-Recorder Repairers
6424	Tapers
1412	Tax Accountants
2110	Tax Attorneys
1412	Tax Auditors
4712	Tax Preparers
8216	Taxi Drivers
4752	Taxicab Coordinators
8216	TAXICAB DRIVERS AND CHAUFFEURS
4795	TEACHER AIDES
4795	Teacher Aides I
4795	Teacher Aides II
2350	Teacher of Mentally Retarded
2350	Teachers of Blind
2350	Teachers of Deaf
2350	Teachers of Handicapped Students
3020	Teaching Dietitians
3620	Teaching Supervisor Medical Technologists
1341	Technical Directors
3720	Technical Illustrators
4230	TECHNICAL SALES WORKERS AND SERVICE ADVISORS
3711	Technical Testing Engineer
2390	Technical Training Coordinators
2390	Technical Training Instructors
3980	TECHNICAL WRITERS
4751	Telecommunications
1341	Telegraph Office Managers
6158	TELEPHONE INSTALLERS AND REPAIRERS
6158	Telephone Maintenance Mechanics
4732	TELEPHONE OPERATORS
4152	Telephone Services Sales Representatives
4366	Telephone Solicitors
32402	TELEVISION DIRECTORS
3240	Television Directors
6155	Television-and-Radio Repairers
6151	Television-Cable Installers
4364	Tellers
4793	Terminal Operators
4793	Terminal-System Operators
5246	Termite Exterminator Helpers
5246	Termite Exterminators
6872	Test Bakers
8250	Test Pilots
3710	Test Technicians
3710	Testers
1472	Testers
1352	Theatre Managers
1843	Theoretical Physicists
7512	Threading Machine Operators
4644	Ticket Agents
4364	Ticket Sellers
4644	Ticketing Clerks
1634	Time-Study Engineers
3620	Tissue Technologists
3960	Title Clerks

3960	Title Examiners
3960	Title Searchers
6811	TOOL AND DIE MAKERS
1635	Tool Designers
6811	Tool Makers
4363	Tool-and-Equipment Rental Clerks
3710	Topographical Drafters
8213	Tow Truck Operators
3920	Tower Air-Traffic-Control Specialists
3820	Toxicologists
8232	Trackmobile Operators
6112	Tractor Mechanics
8318	Tractor Operators
8212	TRACTOR-TRAILER TRUCK DRIVERS
8212	Tractor-Trailer Truck Drivers
4753	Traffic Clerks
1341	Traffic Managers
1342	Traffic Managers
4753	TRAFFIC, SHIPPING, AND RECEIVING CLERKS
1101	Traffic-Safety, Administrators
4340	Trailers and Mobile Homes Salespersons
8113	Train Dispatchers
2390	Training Representatives
4623	Transcribing-Machine Operators
8725	Transfer Operators
6152	Transformer Repairers
3290	Translators
6111	Transmission Mechanics
1633	Transmitter Engineers-in-Charge
3930	Transmitter Operators
5257	TRANSPORTATION ATTENDANTS
1210	Transportation Directors
1628	Transportation Engineers
7669	Transportation Equipment Painters
1342	TRANSPORTATION FACILITIES MANAGERS
1359	Travel Agency Managers
4369	TRAVEL AGENTS
4644	Travel Clerks
1220	Treasurers
3820	Tree Surgeons
7633	Trimmer Sawyers
6422	Trimmers
6153	Trouble Shooters I
6433	Trouble Shooters II
1342	Truck Terminal Managers
6115	Truck-Body Builders
8726	Truck-Driver Helpers
6111	Tune-Up Mechanics
6932	Turbine Operators
2390	Tutors
7642	TYPESETTING AND COMPOSING MACHINE OPERATORS
6174	Typewriter Repairers
4624	TYPISTS

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3820	Ultrasound Technologists
3401	Umpires
1414	UNDERWRITERS
1414	Underwriters
8725	Unscramblers
6853	UPHOLSTERERS
7655	Upholstery Sewers
1920	URBAN AND REGIONAL PLANNER
2810	Urologists

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6156	Vacuum Cleaner Repairers
8212	Van Drivers
8726	Van-Driver Helpers
4793	Varitype Operators
1250	Vehicle Leasing and Rental Managers
4030	Vending-Stand Supervisors
4366	Vendors
2120	Veteran Appeals Reviewers
4230	Veterinarian Supplies Sales Representatives
2701	VETERINARIANS
2701	Veterinary Anatomists
2701	Veterinary Bacteriologists
2701	Veterinary Epidemiologists
3690	Veterinary Laboratory Technicians
2701	Veterinary Livestock Inspectors
2701	Veterinary Meat Inspectors
2701	Veterinary Pharmacologists
2701	Veterinary Virologists
1210	Vice Presidents
3930	Video Operators
6172	Violin Repairers
2401	VOCATIONAL AND EDUCATIONAL COUNSELORS
2390	Vocational Training Instructors
23904	VOCATIONAL TRAINING INSTRUCTORS
2350	Vocational Training Teachers
2401	Vocational-Rehabilitation Counselors
24013	VOCATIONAL-REHABILITATION COUNSELORS
1359	Volunteer Services Coordinators
2032	Volunteer Services Supervisors

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5213	WAITERS AND WAITRESSES
4630	Ward Clerks
1342	Warehouse Managers
8725	Washing-Machine Loaders-and-Pullers
6910	Waste-Treatment Operators
3831	Wastewater Treatment Plant Chemists
6910	Wastewater-Treatment-Plant Attendants
6910	Wastewater-Treatment-Plant Operators
6171	Watch Repairers
6910	WATER AND SEWAGE TREATMENT PLANT OPERATORS
3831	Water Purification Chemists
6450	Water-Meter Installers
1473	Water-Pollution Control Inspectors
6450	Water-Softener Servicer-and-Installers
6910	Waterworks Pump-Station Operators
7669	Waxing Machine Operators
3690	Weather Observers
7443	Web Press Operators
7840	Weighers
1739	Weight Analysts
7830	Weld Inspectors II
7714	Welder-Fitters
7714	WELDERS
1623	Welding Engineers
4230	Welding Equipment Sales Representatives
1101	Welfare Directors
6474	Well-Drill Operators
1442	WHOLESALE AND RETAIL BUYERS
5253	Wig Dressers
6172	Wind-Instrument Repairers
5244	Window Cleaners
1352	Winter Sport Managers

6867	Wire Coilers
6154	Wirers
4240	Women's and Girl's Apparel Sales Representatives
4340	Women's Apparel and Accessories Salespersons
6832	Wood Machinists
1852	Wood Technologists
18521	Wood Technologists
8769	Woodworking-Shop Hands
4624	Word-Processing-Machine Operators
46242	WORD-PROCESSING-MACHINE OPERATORS
	-Y-
8113	Yard Conductors
8233	Yard Couplers
8232	Yard Engineers
4340	Yard Goods Salespersons
8113	Yard Managers
5622	Yard Workers
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2701	Zoo Veterinarians
1854	Zoologists

The **Nebraska Career Information System** (NCIS) enhances the efforts of agencies and schools involved in occupational counseling and education by:

- Collecting current labor market and educational information and developing it into usable forms.
- Developing and managing delivery systems.
- Consulting with user agencies on use of career information in counseling and instructional programs.

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